Intergovernmental Agreement for Remedial Investigation and Source Control Measures

DEQ No. LQVC-NWR-03-10

Outfall Basin 53A Source Investigation Report

City of Portland Outfall Project ECSI No. 2425

May 2012

PREPARED BY





ENVIRONMENTAL SERVICES CITY OF PORTLAND working for clean rivers This page intentionally left blank

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Abbreviations and Acronyms

AGC	Ash Grove Cement
AOPC	area of potential concern
BES	Bureau of Environmental Services
BMP	best management practice
City	City of Portland
ConMet	Consolidated Metco, Inc.
COI	contaminant of interest
CSM	conceptual site model
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DDx	sum of DDD, DDE and DDT
DEQ	Oregon Department of Environmental Quality
ECSI	Environmental Cleanup Site Information
EPA	U. S. Environmental Protection Agency
EVRAZ	EVRAZ North America
IGA	intergovernmental agreement
JSCS	Joint Source Control Strategy
LWG	Lower Willamette Group
mg/Kg	milligrams per kilogram
MH	manhole
NEC	No Exposure Certification
NPDES	National Pollutant Discharge Elimination System
OF	outfall
PAH	polycyclic aromatic hydrocarbon
РСВ	polychlorinated biphenyl
Port	Port of Portland
ppm	parts per million
RI	remedial investigation
RM	river mile
SAP	Sampling and Analysis Plan
SCM	source control measure
SLV	screening level value
SVOC	semivolatile organic compound
TOC	total organic carbon
TS	total solids
TSS	total suspended solids
µg/Kg	micrograms per kilogram
µg/L	micrograms per liter

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section 1 Introduction

This report describes the City of Portland's (City) drainage basin evaluation and source investigation activities in Outfall Basin 53A. Basin 53A investigation activities were initiated due to the Basin's industrial nature and suspected upland sources discharging to the City's stormwater conveyance system. Outfall 53A discharges to the east side of the Willamette River at approximately river mile (RM) 2.7 in the Portland Harbor Study Area. The activities described in this report are part of the City's ongoing Remedial Investigation associated with the Portland Harbor City of Portland Outfalls Project being conducted pursuant to the August 13, 2003, Intergovernmental Agreement (IGA) between the Oregon Department of Environmental Quality (DEQ) and the City's Bureau of Environmental Services (BES). The data collected under these investigations support ongoing work by DEQ and the City to identify, characterize and control discharges to the Basin 53A

DEQ has identified two sources of polychlorinated biphenyls (PCBs) and metals within the basin and the City source investigations indicate that no additional source investigation is needed. Both sites are in DEQ's Cleanup Program, are conducting stormwater source control evaluations, and have implemented source control measures (SCMs) under DEQ oversight. An evaluation of inriver sediment data near the outfall does not indicate that Outfall 53A is a significant pathway for contaminant discharges to the Willamette River. Based on the findings presented in this report, contaminants of interest (COIs) potentially warranting source tracing in this basin have been identified, as well as major sources and potential pathways of these COIs to the City conveyance system. Therefore, the City plans no further source tracing in this basin. Investigation results, and known and potential sources of PCBs and metals, are evaluated in more detail in this report.

1.1 Purpose and Scope

The purpose of this report is to evaluate recent source investigation data, along with information from upland sites within and adjacent to Basin 53A, to identify possible current sources of basin-specific COIs that may be discharging to the Willamette River and to determine whether additional source identification is needed. Specifically, this report:

- Describes Basin 53A and its conveyance system
- Identifies upland sites within and adjacent to the basin
- Evaluates inriver sediment data near the outfall to assess whether Outfall 53A is a significant pathway for contaminant discharges to the Willamette River
- Presents and evaluates the results of source investigation activities conducted by the City within the basin to identify COIs that may be discharging from Outfall 53A at concentrations indicating potentially significant upland sources

- Develops a conceptual site model (CSM) for the basin that is informed by the basin evaluation and source investigation results
- Determines whether further source investigation is needed to identify current sources of basin COIs to the City conveyance system

1.2 Approach

Basin 53A was not within the Portland Harbor Superfund Site Initial Study Area but became part of the expanded study area in 2006. The City subsequently initiated investigations to identify and evaluate potential COIs and upland sources in the basin. The approach to the Basin 53A Source Investigation comprised a set of tasks that generally followed the process outlined in the *Programmatic Source Control Remedial Investigation Work Plan for the City of Portland Outfalls Project* (CH2M HILL, 2004). Basin 53A source investigation activities have been conducted iteratively; initial sampling was focused on evaluating discharges from a known source, and subsequent sampling activities were planned and conducted progressively, as needed to address new data gaps identified and to clarify whether sources of detected contaminants represented ongoing discharges to the conveyance system or were from historical sources¹. In addition to data collected in the City stormwater conveyance system, data from upland site cleanup activities that are in progress or have been completed during the course of the City's investigations in this basin were used to assess current sources to the system. The major components of the Basin 53A assessment and source investigation are as follows:

- 1. *Determine the need for source investigation*. The City reviewed publically available information on file for DEQ Cleanup Program sites and other facilities in the basin to evaluate the likelihood that upland sources could be discharging contaminants at significant concentrations to the City conveyance system.
- 2. *Identify basin COIs.* Basin 53A source tracing COIs were identified based on a weight-of-evidence approach that included evaluation of chemical data for inriver sediment samples collected in the vicinity of Outfall 53A and sampling of stormwater and stormwater solids from near the downstream end of the outfall pipe (i.e., whole-basin samples).
- 3. *Identify major sources*. The City deployed sediment traps in the three branches of the Basin 53A conveyance system and at the downstream (whole-basin) sampling location, as well as targeted inline solid samples, to evaluate potential source contributions to the system.

¹ Upland site cleanup activities that are in progress or completed during the course of source investigation in a basin may result in a change in status of a source from current to historical.

1.3 Report Organization

This report presents the following information:

- *Section 2: Background* Describes basin characteristics, including basin background information, identification and summaries of potential sources within or adjacent to Basin 53A, and the general outfall setting.
- Section 3: Evaluation of River Sediment Data Presents an evaluation of inriver sediment data collected near the outfall to help identify contaminants for which the Basin 53A conveyance system may be a significant pathway to the river.
- Section 4: Evaluation of Source Investigation Data Provides a description of source investigation activities and an evaluation of inline stormwater system investigation data to identify contaminants (i.e., COIs) for which additional investigation may be needed to identify contaminant sources (i.e., source tracing) and to upland sources of those contaminants.
- Section 5: Basin 53A Conceptual Site Model Develops a CSM for the basin including identification of basin-specific stormwater COIs, identification of possible sources and pathways of the basin COIs to the City conveyance system, and evaluation of source control status.
- Section 6: Conclusions and Next Steps Presents a summary of findings and conclusions from the Basin 53A source investigation and planned follow-up steps
- Section 7: References

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Basin Background

The location of Outfall 53A within the Portland Harbor Study Area hydrologic boundary² is shown on Figure 1. Figure 1 also depicts the approximate drainage basin delineation for Outfall 53A and the current configuration of the stormwater conveyance system. Information regarding the conveyance system and associated drainage basin is summarized below.

2.1 Historical Basin Information

Basin 53A is located on the east side of the Willamette River in the Rivergate Industrial Area at RM 2.7. Before the construction of the basin stormwater conveyance system, the Rivergate Industrial Area and surrounding properties were used for placement of dredged material from the Willamette and Columbia Rivers. Historical records, including aerial photographs and U.S. Army Corps of Engineers dredge reports, indicates that dredge placement began as early as the 1920s (Bureau Veritas, 2009a). Port of Portland (Port) records confirm that dredge fill was in place throughout the area currently delineated as Basin 53A as early as 1942, and that dredge deposition was continued periodically by the Port throughout the 1960s (Port, 1968).

Outfall 53A was constructed in 1970 by the Port of Portland as a storm-only sewer. The conveyance system has not changed significantly since 1971, although the basin drainage area has expanded as industrial sites have developed and connected to the system. All existing connections to the stormwater trunk lines have been in place since the early 1980s. Figure 1 depicts the existing industrial site connections within Basin 53A as well as the year that each connection was made. The Rivergate area was annexed incrementally by the City starting in 1979 and the conveyance system was later transferred to the City. The approximate drainage area for this conveyance system is 66 acres.

2.2 Current Basin Configuration and Outfall Setting

The basin stormwater conveyance system consists of three branches and associated catchment systems as shown on Figure 1. The three stormwater lines discharge (at manhole AAA179) to a 48-inch-diameter main at the intersection of N. Rivergate Boulevard and N. Ramsey Boulevard, as follows:

- A 36-inch-diameter pipe conveys stormwater drainage from the northern portion of the outfall basin ("northern branch");
- A 24-inch-diameter pipe conveys stormwater drainage from the eastern portion of the basin ("eastern branch"); and

² The hydrologic boundary represents the entire area that drains stormwater into the Willamette River within the bounds of the Portland Harbor Study Area.

• A 42-inch-diameter pipe conveys stormwater drainage from the southern portion of the basin ("southern branch").

Several private outfalls associated with the Ash Grove Cement (AGC) facility are located immediately upstream of Outfall 53A, and several private outfalls associated with the JR Simplot and the EVRAZ (formerly Oregon Steel Mills) sites are located downstream of Outfall 53A. Dock/berth structures associated with these industrial sites also are located upstream and downstream of the City's outfall (see Figure 1). The private outfalls and Outfall 53A discharge within a river reach identified by the U.S. Environmental Protection Agency (EPA) as an area of potential concern (AOPC 1) for metals (cadmium, copper, mercury, zinc), total low-molecular-weight polycyclic aromatic hydrocarbons, polychlorinated biphenyls (PCBs), dioxins, pesticides [2,4'-DDT, delta-hexachlorocyclohexane (delta-BHC), total DDx], and benzyl alcohol (EPA, 2010). This AOPC extends from RM 1.9 to 2.9. Most of the elevated concentrations of these chemicals are between RMs 2.0-2.5 (See LWG Portland Harbor RI maps [Integral, 2011] in Section 5.1).

2.3 Land Use and Upland Facilities

Basin 53A is within an area zoned for industrial land use, and most properties in the basin are occupied by industrial facilities. Current and historical uses of properties within and adjacent to Basin 53A were reviewed to identify potential sources (e.g., facilities, operations) of contaminants to the Basin 53A conveyance system. Information characterizing properties discharging to Basin 53A was compiled from existing BES, DEQ, and EPA files and databases and is summarized the following tables:

- **Table 1** summarizes the available information on facilities currently located in Basin 53A, including site drainage information, discharge permits, and business type.
- **Table 2** lists industrial facilities that have been issued National Pollutant Discharge Elimination System (NPDES) permits to discharge to the Basin 53A stormwater conveyance system and the time period for which stormwater data are available under these permits (current and former). BES maintains monitoring data for 1200-and 1300-series NPDES general stormwater permits.
- **Table 3** lists sites within or adjacent to Basin 53A with known or potential hazardous substance contamination included in DEQ's environmental cleanup site information (ECSI) database. Summaries of available information in DEQ files for these sites are included in Appendix A.
- **Table 4** lists industrial facilities located within or adjacent to Basin 53A that have current DEQ-issued air discharge permits.

Currently, eight tax lots (or portions thereof) and adjacent roadways drain to the 53A stormwater conveyance system. Some facilities operate on more than one tax lot. Therefore, the basin is comprised of a small number of current and historical facilities. In 2001, DEQ identified the South Rivergate Industrial Park (ECSI#2980) as a study area with potential sources to the river; facilities in Basin 53A were a subset of the study area. In the South Rivergate Industrial Park Strategy Recommendation (DEQ, 2001), DEQ identified Oregon Steel Mills (aka EVRAZ) as active in the Cleanup Program and many other sites in Basin

53A as low priority. But in 2003, partly as a result of a release to the river via the municipal storm system, Consolidated Metco, Inc. (ConMet) entered the Cleanup program. Currently, EVRAZ and ConMet are the only active cleanup sites evaluating sources within the DEQ Cleanup Program, including discharges to the City's Basin 53A storm system.

The information presented in these tables is used is the development of the Basin 53A conceptual site model (Section 5) to identify potential contaminant sources and contaminant migration pathways from upland sources to the City conveyance system.

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Evaluation of River Sediment Data

Section 3.1 presents a summary of the available Willamette River sediment data in the vicinity of Outfall 53A. The data are evaluated in Section 3.2. The purpose of evaluating the inriver sediment data is to provide one line of evidence in identifying contaminants that may have a significant pathway from upland sources to the river via the Basin 53A stormwater conveyance system.

3.1 Summary of Inriver Sediment Data Set

The data set used for this evaluation includes thirty-five inriver sediment samples (including surface and core sediment) collected in the vicinity of Outfall 53A in conjunction with the Lower Willamette Group (LWG) Remedial Investigation (Integral, 2007, 2008; Anchor and Integral, 2008). These include ten samples from four locations in the immediate vicinity of the outfall (ranging from 100 to 200 feet offshore), six samples from three upriver locations (up to 500 feet upriver of the outfall), and nineteen samples from thirteen downriver locations (up to 1,575 feet downriver of the outfall). The most downriver sample location selected for this evaluation is located approximately 1,575 feet from Outfall 53A, near the midpoint of AOPC 1. Sample locations relative to Outfall 53A are shown on Figure 2, and the corresponding data are summarized in Tables B-1, B-2, and B-3 in Appendix B.

3.2 Data Interpretation

Comparison of analytical results for the samples collected in the immediate vicinity of the outfall to samples collected upriver and downriver from the outfall was performed to assess whether the spatial distribution of sediment contaminant concentrations suggest that upland sources are significantly contributing contaminants to the Willamette River via the Basin 53A conveyance system. In addition, concentrations in samples from the locations adjacent to the outfall were compared to the screening level values (SLVs) established in the *Portland Harbor Joint Source Control Strategy* (JSCS; DEQ/EPA, 2005, updated in 2007) to identify contaminants with elevated concentrations near the outfall. The results of this evaluation, as discussed below, do not indicate that Outfall 53A is a significant pathway for contaminants to the river.

3.2.1 Metals

In the four surface sediment samples collected near the outfall, cadmium, lead, and mercury slightly exceed their respective Bioaccumulation SLVs in one or two of the samples. Detected concentrations are all significantly less of their respective Toxicity SLVs. Other metals concentrations in these samples are less than the JSCS SLVs. Within the overall data set (upriver, downriver, and at the outfall), most metal concentrations are similar, except that mercury concentrations in some of the upstream samples in the vicinity of the AGC dock are approximately 10 times higher than concentrations at and downriver of the outfall. The low concentrations near the outfall and the spatial distribution of metal concentrations

in river sediments do not indicate the Basin 53A conveyance system is a significant pathway for metals to the river.

3.2.2 Pesticides

Concentrations of DDT (and its breakdown products), total chlordane, and dieldrin exceed the Bioaccumulation SLVs in one or more samples from adjacent to Outfall 53A, but most of these exceedances are slight (concentrations less than 10 times the SLV) and nearly all the detected concentrations were flagged as estimated values. Concentrations of these and other pesticides are similar throughout the data set, with the exceptions of DDT and gamma-BHC. The DDT concentration detected in a subsurface sample collected upstream of Outfall 53A, in the vicinity of the AGC dock, is elevated relative to concentrations in the remainder of the data set. In one of the subsurface samples from closest to the outfall, the estimated gamma-BHC concentration slightly exceeds the Toxicity SLV. Gamma-BHC concentrations in this sample and in a sample collected immediately upriver at the AGC dock are elevated relative to other samples included in the remainder of the data set, with the higher concentration in the AGC dock sediment sample. In 2006, the AGC-Rivergate Plant was added to DEQ's ECSI database and referred to DEQ Northwest Region's Site Assessment Program due to the elevated concentrations of pesticides, polycyclic aromatic hydrocarbons (PAHs) and PCBs in the sample collected from its dock area (DEQ, 2009). Based on the spatial distribution of these concentrations, it appears that the source of gamma-BHC in the sediment sample near Outfall 53A is likely from upstream, near the AGC dock. The low concentrations near the outfall and the spatial distribution of pesticide concentrations in river sediments do not indicate the Basin 53A conveyance system is a significant pathway for pesticides to the river.

3.2.3 PCBs

Most of the samples collected adjacent to the outfall have total PCBs concentrations that exceed the JSCS Bioaccumulation SLV; however, all are significantly less than the Toxicity SLV. Of the samples collected in the immediate vicinity of Outfall 53A, the surface sample collected closest to the outfall had the highest total PCB Aroclor concentration (163 μ g/Kg total Aroclors); however, the total PCB congener concentration for this same sample is notably lower (62 µg/Kg). PCB Aroclors were detected at similar concentrations (156 and 169 µg/Kg) in surface and core samples collected adjacent to the AGC dock, just upriver of Outfall 53A (PCB congener results for these samples also were less than the Aroclor results). These results suggest that the source(s) of PCBs detected in the sample nearest to the outfall is potentially upstream (in the vicinity of the AGC dock) and/or within Basin 53A. The highest total PCBs concentration in the data set $(1,240 \ \mu g/Kg)$ was detected in a sample collected more than 1,200 feet downriver from the outfall, adjacent to the EVRAZ site. The low concentrations near the outfall and the spatial distribution of PCB concentrations in sediment do not indicate the Basin 53A conveyance system is a significant pathway for PCBs to the river; the distribution suggests that there may be a source of PCBs upstream of Outfall 53A.

3.2.4 PAHs

PAH concentrations in the samples from adjacent to Outfall 53A are low; two of the samples have one PAH (in each sample) that slightly exceeds the corresponding SLV. By comparison, PAH concentrations are elevated in the surface and core samples collected upriver near the AGC dock and represent the highest concentrations in the data set. The total PAH concentrations in the remainder of the data set generally are similar to the concentrations detected near the outfall and only two samples (collected from a single core located adjacent to the JR Simplot dock downstream of the outfall) contain PAH concentrations slightly above JSCS SLVs. The low concentrations near the outfall and the spatial distribution of PAH concentrations in sediment do not indicate the Basin 53A conveyance system is a significant pathway for PAHs to the river; the distribution suggests that there may be a source of PAHs upstream of Outfall 53A.

3.2.5 Phthalates

Phthalates either were not detected or were detected at concentrations less than JSCS SLVs in all samples in the data set. The low concentrations near the outfall do not indicate the Basin 53A conveyance system is a significant pathway for phthalates to the river.

3.2.6 Semivolatile Organic Compounds (SVOCs)

SVOC compounds (i.e., phenolic SVOCs, organonitrogen SVOCs, halogenated SVOCs) either were not detected or were detected at low estimated concentrations less than JSCS SLVs (where applicable) in all samples in the data set. The low concentrations near the outfall do not indicate the Basin 53A conveyance system is a significant pathway for SVOCs to the river.

3.2.7 Summary

Review of the magnitude and spatial distribution of contaminant concentrations in river sediment from upstream, adjacent to, and downstream of the Outfall 53A indicates that the outfall does not appear to be a significant pathway for conveying contaminants from upland sources to Willamette River sediments. There may be a source for some contaminants upstream of the outfall.

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Evaluation of Source Investigation Data

This section of the report presents and evaluates the results for samples (dry-weather flow, stormwater, and stormwater solids samples) collected by the City within the Basin 53A conveyance system. Section 4.1 provides a chronological overview of the source investigation activities and major findings for each stage of the investigation. Section 4.2 synthesizes the source investigation information to identify basin COIs and evaluates potential sources in the basin.

During the course of the City's source investigation work in this basin, source control activities were occurring at several upland sites, which can complicate interpretation of the inline samples. For example, detection of elevated concentrations in solids adjacent to a facility that has implemented source controls may indicate offsite migration of a former source and not an ongoing source. This source investigation evaluation uses both inline and upland data to assess whether there are additional sources in the basin warranting source control.

Additionally, inline solids sampling is useful for source tracing because it can indicate adjacent or upgradient sources but does not necessarily indicate a significant source to the river (i.e., a very small amount of elevated solids discharged to the river may not impact river sediment). Therefore, water sampling was employed to assess the overall significance. Both water and solids samples were collected iteratively during this basin investigation to test hypotheses and confirm the basin CSM, which is presented in Section 5.

4.1 Source Investigation Overview

This section briefly describes the results of source investigation activities conducted by the City in Basin 53A that provide the basis for identifying basin COIs and sources of the COIs to the conveyance system. Since 2005, the City has collected inline solids samples (grab and sediment trap), dry-weather flow samples, and stormwater samples within the Basin 53A conveyance system. Sample locations were selected to characterize cumulative discharges from the whole basin as well as discharges to each of the three branches of the conveyance system to identify basin COIs and contaminant sources as summarized in the table below. Figure 3 shows source investigation sample locations. Table 5 summarizes the laboratory analytical results for the inline solids samples. Table 6 summarizes the laboratory analytical results for the dry-weather flow and stormwater data.

Branch	Sample Type	Sample Location and Description/	
		Upstream of MH AAA171 in 24-inch-diameter line	
Northern	Sediment Trap and Inline Solids	Represents drainage from northern most portion of basin (near terminus of N. Rivergate Blvd) including a portion of EVRAZ)	
	Dry-weather Flow,	Upstream of MH AAA179 in 36-inch-diameter line	
Northern	Sediment Trap and Stormwater	Represents drainage from basin north of intersection of N. Rivergate Blvd and N. Ramsey Blvd including portions of EVRAZ	
		Upstream of MH AAA179 in 24-inch-diameter line	
Eastern	Dry-weather Flow, Sediment Trap and Stormwater	Represents drainage from eastern portion of basin (east of intersection of N. Rivergate Blvd and N. Ramsey Blvd) and may include overland flow from a small portion (e.g., driveway aprons) of ConMet	
	Dry-weather Flow, Sediment Trap and Stormwater	Upstream of MH AAA179 in 42-inch-diameter line	
		Represents drainage from southern portion of basin (south of intersection of N. Rivergate Blvd and N. Ramsey Blvd) including most of the developed portion of ConMet	
		Upstream of MH AMS913 in 42-inch-diameter line	
Southern	Inline Solids	Represents drainage from southern portion of basin. Manhole located near southern ConMet property boundary (near the southernmost stormwater lateral from ConMet).	
		Upstream of MH AAA188 in 36-in-diameter line	
	Inline Solids and Stormwater	Represents drainage from southern portion of basin. Manhole located south (i.e. upstream) of ConMet's southern property boundary and lateral stormwater connections.	
	Sediment Trap and	Upstream of MH AAA170 in 48-inch-diameter line	
Main Line (whole basin)	Stormwater	Represents drainage from whole basin. Manhole located about 400 feet upstream of OF53A.	
	Dry-weather flow	At Outfall 53A	

Notes: MH = manhole

4.1.1 2005 Inline Solids and Dry-Weather Flow Investigation

In June 2005, the City collected an inline solids sample from the EVRAZ stormwater lateral where it connects to the City conveyance system at manhole AAA171 (BES, 2005). Because available information for the EVRAZ site indicated surface and subsurface soils at the site contained PCBs at significant concentrations (Exponent, 2003), the City analyzed the inline solids sample for PCB Aroclors to determine if PCBs were being discharged from the EVRAZ site to the City conveyance system.

The total PCB concentration in the inline solids sample exceeded the JSCS Bioaccumulation SLV but was less than the Toxicity SLV (see Table 5). This concentration is much lower than

those detected in onsite storm solids draining to Basin 53A in 2001 (up to 1 mg/kg) but the 2005 sample may not have been representative of storm solids discharged from the site³.

In July 2005, the City collected dry-weather flow⁴ samples from the outfall and the three main branches to identify potential sources of mercury detected during the Illicit Discharge Elimination Program dry-weather flow sampling conducted at Outfall 53A in September 2002. The July 2005 dry-weather flow samples were analyzed only for mercury. Analytical results from the 2005 dry-weather flow and inline solids grab sampling have been reported previously (BES, 2005). Mercury was detected (see Table 6) in the dry-weather flow samples collected in the northern and southern branches, but at concentrations less than the most stringent JSCS SLV (DEQ/EPA, 2005). Mercury was not detected in the whole basin or eastern branch samples. The results do not indicate the presence of significant mercury sources discharging to the City conveyance system and were not further evaluated.

4.1.2 2008 Stormwater Investigation

As part of its Portland Harbor stormwater screening effort, the City conducted four stormwater grab sampling events in Basin 53A at manhole AAA170, representing cumulative discharge from the entire basin. The samples, collected between February and May 2008, were analyzed for a broad suite of analytes (e.g., metals, PAHs, phthalates, PCBs, and SVOCs) to identify stormwater contaminants potentially warranting further source tracing in the basin. The stormwater sampling activities and results are described in detail in the City's *Stormwater Evaluation Report* (BES, 2010). This evaluation included statistical analysis of stormwater data collected by the City, the LWG, and others from City and non-City outfall basins within Portland Harbor to develop harborwide source tracing categories. Based on this analysis, concentrations of total PCBs, arsenic, and zinc were identified as warranting further source tracing⁵ in Outfall Basin 53A.

4.1.3 2007/2008 Sediment Trap Investigation

During the winter of 2007/2008, the City deployed sediment traps at five sampling locations to supplement stormwater data collected concurrently in the basin. Because the volume of solids captured in the sediment traps was limited, the samples were analyzed for a subset of the target analytes, selected in general accordance with the analytical priority order proposed in the *Sampling and Analysis Plan* (SAP) (BES, 2007). The sediment trap solids samples collected from northern branch (ST1), southern branch (ST4), and near the outfall (ST5) were analyzed for PCB congeners, total organic carbon (TOC), total solids (TS), and metals. Samples collected from the northern branch (ST2) and the eastern branch (ST3) were very limited in volume and analyzed only for PCB congeners, TOC, and TS. Details of the

³ The field notes describe 2-3" of fine-grained precipitants on the floor of the pipe. Solids were in welded chunks of dark brown fine cemented material (see Attachment B presented in BES 2005) and did not appear to be soil-derived solids discharged to the conveyance system.

⁴ "Dry-weather flow" is defined as non-stormwater flows from various sources including, but not limited to: diverted stream flow; groundwater infiltration; approved or permitted discharges (e.g., remediated groundwater, structure dewatering, non-contact cooling water); etc.

⁵ 2008 stormwater data are not tabulated in Table 6. A comparison of these data to 2010 data is included in Section 5.

2007/2008 sediment trap investigation are provided in Appendix C, and the associated analytical results are tabulated in Tables C-1 and C-2.

PCBs were detected (see Table 5) in samples collected in the three branches of the conveyance system at concentrations greater than the JSCS Bioaccumulation SLV and less than the Toxicity SLV. Among these samples, the highest total PCBs concentration was detected in the southern branch sample (ST4) and the lowest concentration was detected in the northern branch sample (ST1). Total PCB congeners were detected in the whole basin sediment trap sample at a concentration that exceeds the JSCS Bioaccumulation and Toxicity SLVs. These results are further evaluated in Section 4.2.

Several metals (chromium, copper, lead, manganese, nickel, and zinc) were detected (see Table 5) at concentrations exceeding the JSCS Toxicity SLVs in one more of the samples analyzed for metals. These metals were detected at concentrations < 10 times their respective Toxicity SLVs. Concentrations of arsenic, cadmium, lead, and mercury were detected in one or more samples at concentrations that exceeded the Bioaccumulation SLV; however, these concentrations did not exceed Toxicity SLVs. Some of the highest metals in the branch samples (which are also reflected in the outfall sample) were in the southern branch, which drains the ConMet and Bay Valley Foods facilities. ConMet was suspected to have high metals concentrations in solids (see Appendix A). Bay Valley Foods was a pickle factory and had not been associated with high metals. The Bay Valley Foods facility had also closed in 2008 (see Table 2).

4.1.4 2010 Inline Solids Investigation

Based on the exceedance of JSCS SLVs of selected metals and PCBs concentrations detected in the 2007/2008 southern branch sediment trap sample (ST4), the City conducted additional inline solids sampling in September and December 2010 to investigate possible sources of these constituents upstream of the ConMet site, which had conducted onsite storm system cleaning in 2009. Stormwater samples were also collected to evaluate the overall significance of these inline solids concentrations (see Section 4.1.5 below). The target sampling location (manhole AAA188) was not accessible during the September 2010 sampling activities (the manhole lid was paved over); therefore, a solids sample was collected, immediately upstream from the nearest manhole (AMS913), where the most upstream lateral from the ConMet site connects to the City's conveyance system (see Figure 3). In December 2010, an inline solids sample was collected immediately upstream of manhole AAA188 to supplement the data collected from manhole AMS913. The September and December 2010 inline solids samples were submitted for analysis of PCB congeners, PCB Aroclors, metals, TOC, and TS. Details of both sampling events are provided in Appendix C, and the analytical results are included in Tables C-1 and C-2 in Appendix C.

The total PCBs concentrations detected (see Table 5) in the two 2010 inline solids samples collected from the southern branch, upstream of ConMet facility connections are less than the JSCS Toxicity SLV. Chromium, nickel, and manganese concentrations exceeded the JSCS Toxicity SLVs. Given that there were no operating facilities upstream of ConMet, it is unclear if these results represent back flows from the 2009 cleaning, offsite tracking, or an unidentified new source. Water samples collected downstream of these two samples were used to determine the need for additional source investigation (see Section4.1.5).

4.1.5 2010 Stormwater Investigation

The City collected stormwater samples in December 2010 from five locations within the basin to monitor discharges from each individual branch of the conveyance system and at the outfall. These water samples were used to:

- Evaluate the significance of the elevated metals in the southern branch
- Confirm that there were no major sources between the confluence of the branches and the outfall (two sites connect to the municipal system in this reach)
- See if source control activities in the basin had reduced PCBs and metals concentrations at the outfall.

Samples were collected at manhole AAA170 (representing cumulative discharges from the whole basin) and just upstream of the junction of manhole AAA179 in the northern branch (ST2), eastern branch (ST3), and southern branch (ST4). A sample also was collected at manhole AAA188 to further characterize contributions to this branch upstream of the ConMet site. The samples were submitted for analysis of PCB congeners, metals, and total suspended solids (TSS). Details of the 2010 stormwater sampling are provided in Appendix D, and the analytical results are summarized in Tables D-1 and D-2 in Appendix D.

Total PCB congeners were not detected in the northern branch and upstream sample (AAA188) from the southern branch. PCB concentrations in the whole basin sample, southern branch (downstream from ConMet at AAA179) and the eastern branch exceed the most stringent JSCS SLV (i.e., human health fish consumption) but are less than other SLVs. Arsenic, cadmium, copper, lead, manganese, and zinc concentrations exceed the most stringent SLVs in one or more sample; however, concentrations are < 10 times the most stringent SLV, with the exception of arsenic.

4.2 Data Evaluation

This section briefly evaluates the results of the Basin 53A source investigation activities (described in Section 4.1) to identify basin COIs and the sources of the basin COIs to the conveyance City's system. Source investigation sampling results are summarized in Tables 5 and 6. Sampling locations and basin COI (PCBs and zinc) investigation results are shown on Figure 4.

4.2.1 Identification of Basin COIs

Basin COIs are identified to support the development of a basin conceptual site model (see Section 5) that defines potential contaminant sources and contaminant migration pathways from upland sources to the City's conveyance system. A weight-of-evidence approach was used to identify basin COIs that may pose a potential concern to the river (i.e., sediment or surface water quality) and included consideration of:

• Inriver sediment sample results collected in the vicinity of Outfall 53A (see Section 3)

- Stormwater and stormwater solids results collected from within the conveyance system (see Section 4.1)
- The contaminant concentration and the magnitude of the exceedance of JSCS SLVs

Although evaluation of the inriver sediment in the vicinity of the outfall did not indicate a signature from the outfall (See Section 3), PCBs and zinc were carried forward as COIs for source identification in Basin 53A based on the following findings:

- *PCBs* PCBs were identified as potentially warranting further source tracing in the basin, based on evaluation of the City's 2007/2008 whole-basin stormwater and whole basin sediment trap sampling data. In addition, PCBs are identified as contaminants associated with AOPC 1.
- *Zinc* Zinc was identified as potentially warranting further source tracing in the basin, based on evaluation of the City's 2007/2008 whole-basin stormwater and whole basin sediment trap sampling data. Zinc concentrations were elevated in both the stormwater and sediment trap samples representing whole-basin discharges. Zinc also is identified as a contaminant associated with AOPC 1.

Other contaminants detected in basin source investigations samples are not carried forward into the conceptual site model as basin COIs. Although the City's *Stormwater Evaluation Report* (BES, 2010) determined that arsenic potentially warranted further source tracing in Basin 53A, arsenic was not identified as a COI because the arsenic concentration in the whole-basin (ST5) sediment trap sample did not exceed the JSCS Toxicity SLV and was not appreciably greater than naturally occurring background arsenic concentrations in area soil (DEQ, 2002a). In addition, arsenic in stormwater was below the Toxicity SLVs and the inriver sediment data from the immediate vicinity of the outfall do not point to significant upland sources of arsenic in the basin. Similarly, while chromium, manganese, and nickel exceeded the Toxicity SLVs in the ST5 sediment trap, these metals were not identified as COIs because concentrations were not elevated in the Basin 53A stormwater samples or in inriver sediment samples near the outfall. Even though these other metals were not identified as COIs, source controls implemented to address PCBs and zinc will also help reduce inputs of other metals.

4.2.2 Identification of Potential Sources

The City began field investigations to identify upland sources in Basin 53A in 2005. These efforts included sampling at the downstream ends of the three major branches to assess general source areas to the stormwater conveyance system, as well as targeted sampling at other up-the-pipe locations in the vicinity of known and suspected sources for the purpose of identifying sources and characterizing discharges to the system from specific facilities. The Basin 53A source investigation efforts (described in Section 4.1) included dry-weather flow sampling (2005), inline solids grab sampling (2005 and 2010), sediment trap sampling (2007/2008), and stormwater sampling (2010). Sample locations are shown on Figure 3 and results are summarized in Tables 5 and 6. This section summarizes the findings from the City's evaluation of potential sources of PCBs and zinc into the City stormwater conveyance system.

4.2.2.1 Stormwater Solids Results

The stormwater solids data collected within Basin 53A provide information on the types of contaminants that are entering the stormwater conveyance system and contaminant sources. Evaluation of the solids results (see Section 4.1. and Table 5), the spatial distribution of the solids concentrations, and the adjacency of samples to potential sources (see Figure 4) provide the basis for identifying sources of the basin COIs to the conveyance system, as discussed below:

- PCBs were detected in all stormwater solids samples collected within the basin. Key findings are presented below:
 - Northern branch The EVRAZ site discharges via a storm lateral that connects at the upper end of the northern branch (see Figure 1). Most samples were collected after source controls were initiated at the site and PCB concentrations in the City storm solids were relatively low compared to historical onsite storm solids data.
 - Southern branch The ConMet site discharges to Basin 53A via storm laterals that connect to this branch. The total PCB concentration detected in the 2007/2008 sediment trap sample (ST4; downstream of ConMet) is approximately 10 times higher than the PCB concentrations detected in the two 2010 inline solids samples collected from the southern branch, upstream of ConMet facility connections. Based on these findings, discharges from the ConMet site stormwater laterals were identified as a source of PCBs to the southern branch.
 - *Eastern branch* Although PCBs were detected at an elevated concentration in 2007/2008 sediment trap sample (ST3), no PCB sources to this branch via discharges from site lateral connections were identified. Potential sources are discussed in the conceptual site model (see Section 5).
 - Main outfall pipe (whole basin sample downstream of manhole AAA179) The highest total PCB concentration was detected in the 2007/2008 whole-basin sediment trap (ST5) sample. The total PCB concentration is higher in the whole basin sample (ST5) compared to the highest upstream sample (ST4), this could be interpreted as:
 - PCBs are contributed to the system between manhole AAA179 and the outfall
 - A possible artifact of historical solids with higher PCBs concentrations being transported downstream over time from identified sources (i.e., ongoing source control activities at upstream locations have masked historical patterns)
 - Reflective of the potential variation in source discharge concentrations over time and/or the likelihood of sediment accumulation in the conveyance system

• An indicator of the inherent difficulty with homogenizing and analyzing solids samples for organic constituents.

Potential sources are further discussed in the conceptual site model (see Section 5).

- Zinc was detected in all stormwater solids samples collected within the basin. Key findings are presented below:
 - Northern branch Storm solids data from this branch detected an elevated zinc concentration. The only facility connection to this branch is from the EVRAZ site⁶. Onsite zinc concentrations indicate that EVRAZ site's discharges are a source of zinc to the City conveyance system (see Appendix A).
 - Southern branch The zinc concentration detected in the 2007/2008 sediment trap sample (ST4; downstream of ConMet) is approximately 10 times higher than the zinc concentrations detected in the two 2010 inline solids samples collected from the southern branch, upstream of ConMet facility connections. Based on these findings, discharges from the ConMet site stormwater laterals were identified as a source of metals to the southern branch. Onsite zinc concentrations indicate that ConMet's discharges are a source of zinc to the City conveyance system (see Appendix A). The low zinc concentrations in the stormwater sediment samples upstream of ConMet indicate that the major sources of zinc in this branch have been identified.
 - *Eastern branch* No samples were collected in this branch due to sample size constraints. No zinc sources to this branch via discharges from site lateral connections were identified. Potential sources via other pathways are discussed in the conceptual site model (see Section 5).
 - Main outfall pipe (whole basin sample downstream of manhole AAA179) Zinc was detected at an elevated concentration in the 2007/2008 whole-basin sediment trap (ST5) sample. Zinc was detected at a higher concentration in the southern branch (ST4) and at a similar concentration in the northern (ST1) branch sample suggesting the identified sources likely account for the detected concentration.

4.2.2.2 Stormwater Results

The stormwater data collected within Basin 53A provide information on the types of contaminants that are entering the stormwater conveyance system and contaminant sources. Results of the City's stormwater sampling in each of the three branches of the conveyance system (i.e., upstream of manhole AAA179) and in the whole basin sample are evaluated below. These investigations focused on contributions of PCBs and zinc to the system.

⁶ The City's GIS conveyance system mapping (see www.portlandmaps.com) shows a lateral also connecting to the northern branch just downstream of manhole AAA173. There are no records of connections to this lateral and field inspections do not indicate any connections.

Results for basin COIs are shown on Figure 4. Key findings regarding sources of basin COIs are summarized below:

- PCBs. Total PCB congener concentrations in the 2010 stormwater samples (collected near the outfall and at the downstream end of the three branches) were low in all samples and were lowest in the whole-basin sample. PCBs either were not detected or were within the concentration range for the lowest source tracing category (Category 1) defined in the City's *Stormwater Evaluation Report* (BES, 2010) and are within the lower portion of DEQ's Portland Harbor concentration curves for total PCBs (DEQ, 2010a). Key findings are described below:
 - Northern branch PCBs were not detected in the 2010 stormwater sample from this branch. This suggests current EVRAZ site source controls have been effective in reducing PCB contributions to the City conveyance system.
 - Southern branch PCBs were detected in the 2010 stormwater sample at a low concentration downstream of ConMet and were not detected upstream of ConMet. This suggests that ConMet site source controls have been effective in reducing PCB contributions. The non-detect PCB concentration in the stormwater sediment samples upstream of ConMet indicates no additional major sources of PCBs in this branch.
 - *Eastern branch* No PCB sources to this branch via discharges from site lateral connections have been identified and the 2010 PCB concentration in stormwater was low (0.017 μg/kg).
 - Main outfall pipe (whole basin sample downstream of manhole AAA179) PCBs were detected at a low concentration in the 2010 sample and approximately two orders of magnitude less than the 2007/2008 PCB concentrations. The PCB concentrations detected in the eastern and southern branches are higher than the concentrations detected in the concurrent whole basin stormwater sample. These results suggest that the identified sources likely account for this concentration. Potential sources are discussed in the conceptual site model (see Section 5).
- Zinc was detected in all 2010 stormwater samples collected within the basin. The zinc concentrations detected in the samples from the northern and southern branches and the whole basin sample were at the lower end of concentrations range of the "2-moderate" source tracing category (BES, 2010) and within the lower portion of DEQ's Portland Harbor concentration curves for zinc (DEQ, 2010a). The zinc concentration in the eastern branch was the lowest concentration and well within the "1-low" source tracing category. Key findings are described below:
 - Northern branch The stormwater sample from this branch was elevated for zinc which indicates that the EVRAZ site's discharges are a current source of zinc to the City conveyance system but within the lower portion of DEQ's Portland Harbor concentration curves.
 - *Southern branch* The highest zinc concentration in 2010 was detected in the sample collected downstream of ConMet. This concentration is >10 times

higher than the zinc concentration detected in sample collected upstream of the ConMet facility connections. This result suggests that stormwater discharges from the ConMet site stormwater laterals were likely contributing zinc to the southern branch. The low zinc concentration in the stormwater sediment samples upstream of ConMet indicate that the major sources of zinc in this branch have been identified.

- *Eastern branch* The lowest concentration of zinc in the 2010 samples was detected in this branch. No sources to this branch via discharges from site lateral connections were identified.
- Main outfall pipe (downstream of manhole AAA179) Zinc concentrations in the 2007/2008 whole-basin stormwater (ST5) samples were identified as warranting additional source tracing or control. Zinc was detected at a reduced concentration in the 2010 sample. A zinc concentration higher than the whole basin sample was detected in the southern branch and the concentration in the northern branch was similar to the whole basin sample suggesting that identified sources likely account for the detected concentration.

4.2.2.2 Summary

The source investigation results indicate upland sources of basin COIs (i.e., PCBs and zinc) have been identified and that no additional source investigation is needed. Potential historical and current sources, and implementation of source controls at upland facilities, are further discussed in the conceptual site model presented in Section 5.

This section describes the Basin 53A CSM, which includes basin-specific COIs, likely sources and pathways for these analytes to the Willamette River via the City stormwater conveyance system, and current source control status in the basin. The CSM is based on the preceding evaluations of inriver and inline data and on information for upland sites (see Appendix A), where available and applicable. The approach used in developing the Basin 53A CSM described in this section is consistent with the weight-of-evidence approach described in the *Programmatic Source Control Remedial Investigation Work Plan* for evaluating the potential for discharges to the City stormwater conveyance systems to contribute to Willamette River sediment contamination within the Portland Harbor Initial Study Area (CH2M HILL, 2004).

5.1 Basin 53A COIs

Based on a weight-of-evidence evaluation, described in Section 4.2.1, the following basin COIs were identified:

- Total PCBs
- Zinc

The purpose of identifying contaminants associated with Basin 53A discharges that are potential concerns to the river (i.e., basin COIs) is to help focus and evaluate the results of source investigation activities in the basin. It should be noted, that the evaluation of the inriver sediment data (Section 3) in the vicinity of the outfall did not indicate a signature in Willamette River sediments from Outfall 53A.

5.2 Potential Sources and Pathways

This section evaluates possible sources of Basin 53A COIs to the City's stormwater conveyance system. This evaluation is based on results of the City's sampling (as summarized in Section 4.2) together with information compiled by BES, DEQ, and EPA for upland sites within and adjacent to Basin 53A. Discharges via piped lateral connections and more indirect pathways to the conveyance system are discussed below.

5.2.1 Sources with Piped Connections

Several industrial facilities, including known sources of PCBs and metals, connect to this system (see Tables 1 through 4 and site summaries in Appendix A). Of these sites, ConMet and EVRAZ are the only two that have conducted or are currently conducting source control evaluations under DEQ oversight (refer to Appendix A for a more detailed discussion of site investigations). As such, comprehensive data for piped discharges from

other sites in the basin are not available. However, relevant information (e.g., from DEQ's ECSI database or related to NPDES permit compliance) also is available for other facilities in the basin and was reviewed to evaluate the potential for these other facilities to be major sources of the Basin 53A COIs (see Appendix A).

5.2.1.1 Active DEQ Cleanup Sites

Both sites that are conducting stormwater evaluations under DEQ's Cleanup program are documented sources of PCBs and metals, as summarized below.

ConMet (connects to the southern branch)

- Total PCBs concentrations up to 2,690 µg/Kg were detected in composite cleanout solids samples collected in 2009 from ConMet's stormwater laterals that discharge to the southern branch of the City's conveyance system (Bureau Veritas, 2009a); this maximum concentration is higher than total PCBs concentrations detected in the stormwater solids collected in the City system. Total PCBs concentrations in the inline solids samples collected just upstream of the ConMet facility were significantly lower than the concentration detected in the ST4 sediment trap sample collected immediately downstream of the site's lateral connections (see Figure 4).
- Zinc was detected at concentrations up to 3,760 mg/Kg in composite line cleanout solids samples collected in 2009 from three of ConMet's laterals discharging to the Basin 53A conveyance system (Bureau Veritas, 2009a) (refer to Appendix A for a discussion of onsite storm line video surveys, line cleanouts and metals concentrations). The highest concentration of zinc in the stormwater solids from the City lines was detected in the sediment trap sample collected at the downstream end of the southern branch (see Figure 4). Although (due to limited sample volume) metals were not analyzed in the eastern branch or downstream end of the northern branch, results of the 2010 stormwater samples also indicate that zinc concentrations are highest in discharges from the southern branch. Zinc was not elevated in stormwater or inline solids samples collected immediately upstream of the ConMet facility in 2010.

EVRAZ (connects to the northern branch)

- Total PCBs were detected at concentrations up to 1,020 µg/Kg in solids collected from the EVRAZ conveyance system discharging to Basin 53A in 2001 (see Appendix A). Additionally, PCBs have been detected at concentrations as high as 4,480 µg/Kg in surface soil samples collected from the EVRAZ site (DEQ, 2010b). However, the northern branch total PCB concentrations in sediment trap sample (in 2008) and the stormwater sample (in 2010) were lower (see Figure 4); based on these results, it appears that current PCB discharges from the EVRAZ lateral are not a current major source of PCBs to the conveyance system. Ongoing performance monitoring by EVRAZ is expected to confirm this.
- Zinc has been detected at concentrations up to 2,000 mg/Kg in solids from EVRAZ's onsite conveyance system that drains to Basin 53A (refer to Appendix A). The northern branch zinc concentrations in sediment trap sample (in 2008) and the stormwater sample (in 2010) were lower (see Figure 4) but still exceeded toxicity

screening levels. Ongoing performance monitoring by EVRAZ will evaluate discharges to the City system.

5.2.1.2 Other Potential Sources with Piped Connections

Other potential sources of zinc and/or PCBs with connections to the Basin 53A conveyance system include other NPDES-permitted sites and ECSI sites in the basin that have not conducted source control evaluations under DEQ oversight. JR Simplot (ECSI # 3343; also part of South Rivergate Industrial Park, ECSI #2980) is the only other ECSI site within Basin 53A. This site also is the only other facility (in addition to EVRAZ) that maintains a current NPDES permit for discharges to the City's stormwater conveyance system. The JR Simplot site has been operated as a bulk anhydrous ammonia and urea marine terminal since 1968 (JR Simplot, 2002) and was included on the ECSI database based on discovery of diesel-contaminated subsurface soil (DEQ, 2002b). Limited subsurface soil samples collected from this site (Kleinfelder, 2002) did not contain detectable concentrations of Basin 53A COIs. BES Industrial Stormwater Program records indicate that the site had occasional NPDES benchmark exceedances for zinc in the past but that, through implementation of best management practices (BMPs) as part of the site's general stormwater permit, the site has demonstrated sufficient reductions to receive a monitoring waiver in 2010. Based on this information, JR Simplot is not considered a current major source of Basin 53A COIs.

Information for non-ECSI/non-permitted facilities in Basin 53A (included in Table 1) also was reviewed to evaluate potential upland sources of Basin 53A COIs. Based on the available information, as summarized below, none of these sites is considered likely to be a major source of the Basin 53A COIs:

- The SPC Properties facility (9901 and 10001 North Rivergate Boulevard) operated as a food processing plant (including pickling operations) since 1978. A limited waste oil tank release was discovered and cleaned up at this site in the early 1990s, but no other contamination has been documented at this site. DEQ's Strategy Recommendation for South Rivergate (DEQ, 2001) indicates DEQ found no basis for reopening the SPC Properties file to investigate this facility as a potential source of contaminants to the river. This site had an NPDES stormwater permit from 1992 to 2008, when facility operation ceased. It is not a known or suspected source of Basin 53A COIs.
- Macro Manufacturing (9625 N. Ramsey Boulevard) has operated as a machine shop (for manufacture of housings, shafts, wheels, gear blanks, screws, nuts, bearing housings and special threads) since 1981. No documentation of contamination is on file for this site. Based on inspections every 5 years by BES, starting in 1995, no industrial exposure to stormwater is present at this site, and it has qualified for a No Exposure Certification (NEC) from DEQ. The site is not a known or suspected source of Basin 53A COIs.
- Rivergate Federal Credit Union (9715 N. Ramsey Boulevard) has operated as a credit union at its present location since at least 1979. Based on site use, it is not a known or suspected source of Basin 53A COIs.

• The property listed as owned by Steelmill Warehouse, LLC (14025 N. Rivergate Boulevard) was previously operated by the HB Fuller Company as an adhesive manufacturing facility and currently is the site of the High Temp concrete casting facility. No documentation of contamination is on file for this site. As part of site redevelopment in 2000, a stormwater treatment facility was constructed to treat site stormwater before it discharges to the City conveyance system. The site has qualified for an NEC since 2002. Based on the nature of operations and the presence of stormwater treatment facilities at this site, it is not a known or suspected source of Basin 53A COIs.

5.2.2 Other Potential Pathways

5.2.2.1 Vehicle Drag-Out

There are only two sites (EVRAZ and ConMet) with documented onsite contaminated soils and storm solids. Vehicle drag-out from one or both known PCBs sources in the basin onto N. Rivergate and N. Ramsey Boulevards may explain the detection of PCBs at an elevated concentration in the sediment trap sample from the eastern branch (ST3) and the results of the 2010 stormwater sampling which showed that total PCBs concentrations (while not elevated) were highest in the sample from the eastern branch. The only facilities with piped stormwater connections to this eastern branch are Macro Manufacturing Company and Rivergate Federal Credit Union, which are not considered likely sources, as discussed above. The main gate to EVRAZ is at the upper end of the eastern branch on N. Ramsey Boulevard (DEQ, 2010b), and (based on site maps) vehicle egress from the ConMet site is via both N. Ramsey Boulevard and N. Rivergate Boulevard. Metals and PCBs have been identified as COIs at both sites. Zinc- and/or PCBs-contaminated media may have been historically and/or may currently be transported into the right-of-way from one or both of the facilities by vehicles exiting onto N. Ramsey Boulevard. If contaminant drag-out is occurring, catch basins on N. Rivergate Boulevard also may be conveying contaminants to the Basin 53A conveyance system. Source control evaluations that include the vehicular drag-out pathway have not been conducted under DEQ oversight.

5.2.2.2 Dredge Fill

The *Storm Sewer Inspection and Sediment Removal* report (Bureau Veritas, 2009a) for the ConMet site concludes that the likely source of PCBs detected in the site's conveyance system is contaminated dredge fill material placed on the site before ConMet's operations. ConMet collected four dredge fill samples from subsurface soil in an undeveloped portion of its property; total PCBs were detected in only one sample, at a relatively low concentration (Bureau Veritas, 2009a). EVRAZ also has collected multiple samples of underlying dredge fill throughout the property. PCBs were not detected in the majority of the dredge fill samples, and concentrations detected in the remaining samples were low (RETEC, 2007). Based on the data collected by EVRAZ and ConMet, the dredge fill underlying the basin does not appear to contain significant concentrations of PCBs and therefore is not likely a major source of PCBs to the Basin 53A conveyance system.

5.2.2.3 Air Deposition

The AGC facility (ECSI #4696) is located adjacent to Basin 53A (see site summary in Appendix A). This site in combination with the EVRAZ and JR Simplot sites can discharge a combined total of over 700 tons/year of particulate matter under DEQ Air discharge Permits (see Table 4 and Appendix A). Some fallout from these permitted sources may be deposited onto upland areas within Basin 53A, and then carried by stormwater runoff into the stormwater conveyance system. AGC has used on-specification (on-spec) and offspecification (off-spec) oil to fire the kilns at the Rivergate facility under a DEQ Air Quality discharge permit first issued in 1994. On-spec and off-spec oil are defined as used oil containing no more than 2 parts per million (ppm) and 49 ppm PCBs, respectively (Ash Grove, 2008). The air discharge permit stipulated that off-spec oil could not contain certain metals above specified concentrations (DEQ, 2001), although a maximum zinc concentration was not specified. Based on the source materials being burned, airborne discharges from the AGC facility is a possible source of PCBs and metals to upland areas. However, to the City's knowledge, air discharges from these facilities have not been characterized for PCBs or zinc, so it is unclear whether, or to what extent, they may represent a historical or ongoing contribution of Basin 53A COIs to the conveyance system.

5.2.3 Source Investigation Summary

Based on the source investigation findings summarized above, EVRAZ and ConMet represent the major potential sources of PCBs and zinc to the Basin 53A conveyance system. The magnitude and spatial pattern of detections in the City sediment trap and inline solids samples (in light of concentrations detected at the EVRAZ and ConMet sites) can be accounted for by current or historical piped discharges and/or vehicle drag-out from either or both of these sites. The other potential sources and pathways identified are not likely to represent major COI contributions to the City system.

5.3 Source Control Status

Results of the Basin 53A source tracing evaluation, as summarized above, indicate the major sources of Basin 53A COIs to the City stormwater conveyance system have been identified, are conducting stormwater pathway evaluations under DEQ oversight and have implemented significant source control measures (SCMs), as described below.

- *EVRAZ* As part of both DEQ Cleanup Program requirements and redevelopment requirements under the City's Stormwater Management Manual, EVRAZ in 2006 began implementing measures to control contaminant discharges to its onsite stormwater conveyance system. These measures included removing contaminated surface soil, paving some areas of the site, and implementing additional stormwater BMPs. As of 2007, all stormwater runoff from EVRAZ that drains to Basin 53A (except for roof runoff from the pipe mill and runoff from the administration building and parking lot) passes through a sand filter or bioswale. The site is currently collecting performance stormwater monitoring data to evaluate the need, if any, for additional SCMs (DEQ, 2010b).
- *ConMet* In 2009, ConMet conducted video surveys, cleaned out its onsite stormwater lines and lined a portion of its onsite conveyance system. The site is

currently conducting post-cleanout stormwater monitoring and, to date, has completed two rounds of stormwater sampling. ConMet closed its operations at the site in 2009. In early 2012, Archer Daniels Midland acquired the site. Demolition of the foundry building and other structures began in April and redevelopment (under the City's Stormwater Management Manual) as a liquid sugar terminal is expected to be completed before the end of the year. Redevelopment plans include removal of buildings and onsite storm systems from the northern portion of the site, repaving, and installation of a new stormwater treatment system. DEQ issued a Conditional No Further Action determination to the site in November 2011 that requires the completion of a site Source Control Evaluation (add reference).

Post-SCM monitoring data collected by these sites to date and results of follow-up stormwater sampling conducted by the City in 2010 indicate the SCMs have been effective in controlling discharges of PCBs and metals to the Basin 53A conveyance system via the sites' lateral connections to the system. The table below is a comparison of the 2007 and 2010 stormwater data collected at the outfall for PCBs and those metals that were sampled during both periods. All analytes were lower in 2010, sometimes by an order-of-magnitude. The detected PCBs and metal concentrations are within the lower range of Portland Harbor stormwater concentrations (DEQ, 2010a).

Analyte ^a	2007 Geomean ^b	2010°
Total PCBs (µg/L)	0.0370	0.000278 NJ
Arsenic (mg/L)	4.46	0.69
Cadmium (mg/L)	0.36	0.14
Chromium (mg/L)	42	12
Copper (mg/L)	23.1	7.97
Lead (mg/L)	16.2	4.24
Mercury (mg/L)	0.030	0.007
Nickel (mg/L)	5.82	2.13
Silver (mg/L)	0.13 ^d	<0.01
Zinc (mg/L)	459	337

^a Total metal concentrations are reported.

^b Stormwater Evaluation Report (BES, 2010).

^c See Table 6.

^d Three samples were non-detect and one detect at 0.17 mg/L.

NJ = Tentatively identified and estimated. Only one congener detected, which is unlikely to occur.

Given that COI concentrations were significantly reduced in the City's December 2010 stormwater sample from near the outfall compared to concentrations in the 2008 stormwater samples, SCMs undertaken at these sites appear to have helped reduce COI discharges to the conveyance system.

There are other source control mechanisms beyond the State Cleanup program employed in the basin to help control current and future contaminant discharges to the conveyance system. The recently issued 1200Z NPDES general stormwater permit has lower metals benchmarks and requirements for minimizing vehicle tracking offsite. SCMs at EVRAZ, such as the targeted paving and removal of contaminated surface soil, are expected to reduce the exposure of COI-contaminated soil to vehicle traffic and thus reduce the potential for vehicle drag-out. 1200Z permit requirements will also provide a future mechanism for controls of this pathway. The ConMet site, the other facility identified with a vehicle tracking pathway, is currently undergoing redevelopment. Permits issued to the site include an NPDES 1200C permit to manage construction stormwater and an approved erosion control plan to be implemented during demolition and construction activities. New operations by Archer Daniels Midland will likely be subject to new NPDES industrial permit coverage. Therefore, the potential for future vehicle drag-out is low.

As this new permit is implemented in 2012, reductions in contaminant loading are expected. Additionally, several other facilities are expected to be redeveloped in the near future and could trigger stormwater treatment requirements under the City's Stormwater Management Manual. This page intentionally blank

Conclusions and Next Steps

An evaluation of inriver sediment data near the outfall does not indicate that the outfall is a significant pathway for contaminant discharges to the Willamette River. However, PCBs and zinc were identified as basin COIs, based on the results of Basin 53A source investigations.

The source investigation results indicate all major upland sources of basin COIs (i.e., PCBs and zinc) have been identified and that no additional source investigation by the City is needed. Two major upland sources (EVRAZ and ConMet) of PCBs and zinc are in the DEQ Cleanup Program, are conducting stormwater source control evaluations, and have implemented SCMs under DEQ oversight. Most of the current stormwater runoff from EVRAZ to the Basin 53A conveyance system (via its connection to the northern branch) is now pre-treated. EVRAZ is currently collecting performance stormwater monitoring data to evaluate the need, if any, for additional source control measures. Vehicle drag-out of contaminated surface soil from the site may represent an ongoing source to the system but new 1200Z stormwater requirements will provide a mechanism to address this potential source.

Many of the onsite stormwater lines at the ConMet site were cleaned in 2009, and this facility is currently undergoing redevelopment. Based on two post-cleanout stormwater sampling events, current stormwater discharges from the site do not appear to represent a significant PCBs source; however, zinc concentrations in ConMet stormwater discharging to the City system are still somewhat elevated relative to the statistically defined harborwide source tracing categories (BES, 2010). Zinc concentrations in the City's 2010 stormwater samples from the southern branch (downstream of the ConMet connections) and the wholebasin sampling location also are somewhat elevated. Site redevelopment under the City Stormwater Management Manual will include removal of a historical foundry building and a portion of the old stormwater system and installation of onsite stormwater treatment. The Conditional No Further Action determination issued by DEQ in 2011 requires completion of a Source Control Evaluation to verify that the site is not a significant current or future source of contaminants to the Willamette River.

Data collected by EVRAZ and ConMet do not provide information to evaluate whether site contaminants are migrating to Basin 53A via drag-out to adjacent rights-of-way. Potential COI contributions to the basin from air deposition also are unknown. Nevertheless, the City's most recent stormwater data from this basin indicate that overall COI contributions to the system have decreased over the course of the City's investigation, likely as a result of the SCMs at these sites.

Based on the findings presented in this report, COIs potentially warranting source tracing in this basin, and major sources and potential pathways of these COIs to the City conveyance system, have been identified. Therefore, no further source tracing is warrented in this basin. This report will support future DEQ decisions for this basin.

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Tables

Table 1 Basin 53A Facility List

2001 RNO	Business Name	Address	Drainage	SIC Number	Permit Type	Permit No.	Business Type	Exposure	Comments
R708884100	Macro Mfg	9625 N Ramsey	OF53A	3599	NPDES	NEC	Metal Fabrication	No	No Exposure Cerification
R708884300	Rivergate Federal Credit Union	9715 N Ramsey	OF53A	6021			Offices	No	
R649774300	Oregon Steel Mills Scrap	9891 N Ramsey	OF53A	5093			Scrap Metal Recycling	Yes	Tenant of EVRAZ
R708883900	Bay Valley Foods	10001 N Rivergate	OF53A	2035*, 5141	NPDES	100J 1200Z	Food Processing	Yes	Sanitary pretreatment permit 407.001
R708887000 R708887010	Georgia-Pacific Consumer Products	13333 N Rivergate	WR-220, WR-221, Drywell?	5111			Warehouse- Transportation	Yes	Out of Business
R971260190	Ash Grove Cement West Inc	13939 N Rivergate	WR-19	3274	NPDES	INDIV	Lime Processing Plant	Yes	
R971260200 R971260210	Consolidated Metco Inc	13940 N Rivergate	OF53A	3361*, 3365*, 3714	NPDES	1200Z	Metal Fabrication	Yes	Out of Business
			WR-17, WR-18	4491*, 5169, 5191	NPDES	100J 1200Z	Chem Unldng/Trans	Yes	Formerly Unocal
R971260240 R971260310	J R Simplot Company	14003 N Rivergate	OF53A	4491*, 5169, 5191	NPDES	1200Z	Chem Unldng/Trans	Yes	Formerly Unocal
			Drywell	4491*, 5169, 5191			Chem Unldng/Trans	Yes	Formerly Unocal
R971260030 R971260260	High-Temp Inc.	14025 N Rivergate	OF53A	3297	NPDES	NEC	Refractory Casting & warehouse/dist	No	No Exposure Certification
R649774290	EVRAZ, Inc. North America (NA) (aka Oregon Still Mills and EVRAZ Oregon Steel)	14400 N Rivergate	WR-367	3312*, 5051	NPDES	INDIV	Metal Fabrication	Yes	Process Water Discharge to River
R649774290 R649774290	EVRAZ, Inc. NA (aka Oregon Still Mills and EVRAZ Oregon Steel)	14400 N Rivergate	WR-22, WR-23, WR-24, OF53A	3312*, 5051	NPDES	1200Z	Metal Fabrication	Yes	Sanitary pretreatment permit 300.013
R649774291	Industrial Construction Services.	14400 N Rivergate	OF53A	1731					Could not locate, Incorporated into EVRAZ
R649774290	International Mill Service	14400 N Rivergate	OF53A	3398					Could not locate, Incorporated into EVRAZ
R649774292	Air Products and Chemicals	14400 N Rivergate	OF53A	2813			Gas-Ind&Med- Cylinder & Bulk-Mfrs		Located on Oregon Steel Mill property; could not access, Incorporated into EVRAZ
R649774295	SHAWCOR Pipe Protection	14400 N Rivergate	OF53A						Could not locate, Incorporated into EVRAZ
R649774293	David J Joseph Co. Oregon Feralloy Partners	14400 N Rivergate	OF53A	5093			Aircraft Salvage		Located on Oregon Steel Mill property; could not access, Incorporated into EVRAZ

* indicates SIC # has been verified via site inspection

WR indicates non-City outfall discharging to the Willamette River

Table 2Basin 53 A Current⁽¹⁾ and Historical NPDES Permits

Address	Company	Permit	Type and Ti	ne Period	Available Stormwater Data	Notes		
Addrood	Company	Туре	Issue Date	Expiration Date ⁽²⁾	Period	Notes		
	Steinfelds	100J	12/20/1990	12/31/1995	4/7/95-4/22/08	100J discharges sent to sanitary in 2000.		
	Products Co.	1200F	8/25/1992	9/30/1996				
		100J	10/22/1996	7/31/2001				
		1200Z	12/24/1997	6/30/2002				
10001 N. Rivergate		1200Z	10/10/2002	6/30/2007				
	Treehouse Foods	1200Z	6/2/2005	6/30/2007		Name Changed w/DEQ		
	Bay Valley	1200Z	7/26/2005	6/30/2007		Name Changed w/DEQ		
	Foods, LLC	1200Z	9/25/2007	6/13/2012		Facility stopped production in 6/2008		
		N.O.T.	11/18/2008					
	Consolidated Metco	1200H	7/29/1992	9/30/1996	5/11/95-5/20/08			
13940 N. Rivergate	Consolidated Metco	1200Z	10/20/1997	6/30/2002				
10040 N. Rivergate		1200Z	9/30/2002	6/30/2007				
		1200Z	7/1/2007	6/30/2012		Facility closed 1/31/09		
	Unocal Chemical Division	100J	Unknown	9/29/1995	12/14/00-3/29/10			
	onocal offernical Division	100J	10/22/1996	7/31/2001				
		1200Z	7/27/1997	6/30/2002				
1/003 N. Rivergate	PRODICA LLC	1200Z	8/29/2000	6/30/2002	PRODICA changed to Agrium LLC and then	Name changed to PRODICA LLC 11/1/1999.		
14000 N. Rivergate	JR Simplot	1200Z	9/25/2000	6/30/2002		PRODICA changed to Agrium LLC and then to		
14003 N. Rivergate		1200Z	9/30/2002	6/30/2007		J.R. Simplot by 10/24/00.		
		1200Z	9/25/2007	6/30/2012				
		100J	N.O.T.	3/17/2008				
	Oregon Steel Mills	INDIV	3/5/1986	2/28/1991	See DEQ for INDIV	Discharge of process wastewaters (contact		
	Crogon Clock Millo	INDIV	8/21/1992	9/30/1996	data. ⁽³⁾	cooling water) via non-City outfall WR-367.		
		1200H	8/21/1992	9/30/1996	1200Z data			
		INDIV	6/17/1993	11/30/1997	available from	Modified for flow to river		
		INDIV	5/9/1995	7/10/1995	1/10/95-4/20/10.	Modified for site construction dewatering		
		INDIV	10/18/1996	11/30/1997		Modified to included site Outfall #001		
		1200H, Z	7/22/1997	6/30/2002		1200H permit renewed/changed as 1200-Z		
14400 N. Rivergate		1200Z	11/1/2002	6/30/2007				
		INDIV	4/10/2003	3/31/2008				
		INDIV	6/23/2004	3/31/2008				
	EVRAZ Oregon	1200Z	5/21/2007	6/30/2007		Name changed, EVRAZ Oregon Steel Mills		
	Steel	1200Z	9/25/2007	6/30/2012				
		INDIV	10/2/2007	3/31/2008				
	EVRAZ, Inc., NA	1200Z	9/3/2008	6/30/2012		Name changed to EVRAZ Inc., NA		
		INDIV	9/3/2008	3/31/2008		INDIV renewal filed, DEQ draft 11/25/09		

Notes:

(1) Current permits are indicated in bold.

(2) Expiration date as shown on general permit. DEQ typically gives adminsitrative permit extension date until a new general permit can be issued.

(3) DEQ administers individual permits.

INDIV - Individual permit

N.O.T - Notice of termination of permit coverage for a site.

Table 3 Basin 53A DEQ Environmental Cleanup Site Information List

DEQ CLEANUP SITE	Site Contaminants ⁽¹⁾	Site Located within or adjacent to Outfall Basin 53A	DEQ Cleanup Program Status	Site Stormwater Pathway Evaluated Under DEQ Oversight?
Consolidated Metco (ECSI #3295)	Metals [arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc], PAHs, TPH, PCBs, phthalates	In	Active	In process
EVRAZ, Inc. North America (aka Oregon Still Mills and EVRAZ Oregon Steel) (ECSI #141)	Metals [arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, zinc], VOCs, SVOCs, PAHs, PCBs, TPH	In	Active	In process
JR Simplot (ECSI #3343)	ТРН	Adjacent	Inactive	No
S. Rivergate Industrial Park ⁽²⁾ (ECSI #2980)	Metals [arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc], PAHs, TPH, PAHs, PCBs, phthalates, VOCs	In / Adjacent	Inactive	No
Ash Grove Cement Company (ECSI 4696)	PCBs, calcium-oxide	Adjacent	Inactive	No
Rivergate Industrial Park - Tract O (ECSI #5307)	Metals [arsenic, chromium, mercury, lead], pyrene	Adjacent	Inactive	Yes

Notes:

⁽¹⁾ Site contaminants based on DEQ file summaries presented in Appendix A. The listing of "TPH" implies that PAHs are present because TPH consists of PAHs in addition to other compounds.

(2) ECSI #2980 encompasses a number of discrete DEQ Cleanup sites

TPH = Total petroluem hydrocarbons

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyls

VOCs= volatile organic compounds

SVOCs = semivolatile organic compounds

Table 4Basin 53A DEQ Air Discharge Permits

Permitted Site	Annual Sourcewide Site Emission Limits Particulate Matter (tons/year)	Pathway Evaluated Under DEQ Oversight?
Ash Grove Cement Company	98	No
Air Products Chemicals (aka EVRAZ North America, Oregon Steel Mills)	612 - particulates 5 - lead	No
JR Simplot	28	No

Table 5Basin 53A Inline Solids Results

		Whole Basin		Northern Branch		Eastern Branch		Southern Branch			
		Sediment Trap ST 5	Inline Solids	Sediment Trap ST 1	Sediment Trap ST 2	Sediment Trap ST 3	Inline Solids	Inline Solids	Sediment Trap ST 4		
		Manhole AAA170 Upstream of manhole in 48" Main Line FO080768	Manhole AAA171 Upstream of manhole in 24" EOS Lateral FO050674	Manhole AAA171 Upstream of manhole in 24" EOS Lateral FO080764	Manhole AAA179 Upstream of manhole in 36" Line FO0807065	Manhole AAA179 Upstream of manhole in 24" Line FO080766	Manhole AAA188 Upstream of manhole in 36" Line W10L154-01	Manhole AMS913 10' Upstream of manhole in 36" Line FO105880	Manhole AAA179 Upstream of manhole in 42" Line FO080767		ISCS ⁽¹⁾ 1g Level Value
Class Analyte	Units	6/3/2008	6/21/2005	6/5/2008	6/9/2008	6/9/2008	12/22/2010	9/8/2010	6/5/2008	Toxicity	Bioaccumulation
Total Organic Carbon (EPA 9060 MOD)											
TOC	mg/Kg	94,600	NA	14,100	75,900	98,500	12,000	7,090	126,000		
Total Solids (SM 2540 G)											
TS	%	47.5	NA	71.8	43.1	54.9	81.9	83.0	49.9		
Metals (EPA 6020)											
Arsenic	mg/Kg	13.9	NA	3.83	NA	NA	2.5	2.02	10.8	33	7
Cadmium	mg/Kg	1.73	NA	0.67	NA	NA	0.451	0.69	2.54	4.98	1
Chromium	mg/Kg	627	NA	269	NA	NA	2,470	628	809	111	
Copper	mg/Kg	133	NA	82.5	NA	NA	141	107	181	149	
Lead	mg/Kg	107	NA	39.1	NA	NA	50.5	56.8	176	128	17
Manganese	mg/Kg	5920	NA	2,540	NA	NA	23,700	4,620	6,160	1,100	
Mercury	mg/Kg	0.158	NA	0.068	NA	NA	0.0505	0.019	0.195	1.06	0.07
Nickel	mg/Kg	61	NA	63.5	NA	NA	62.9	51.2	71.8	48.6	
Silver	mg/Kg	0.39	NA	0.14	NA	NA	0.351	0.17	0.55	5	
Zinc	mg/Kg	1440	NA	963	NA	NA	153	305	2130	459	
Polychlorinated Biphenyl (PCB) Congeners	(2, 3)										
Estimated Total	PCBs µg/Kg	986 ⁽⁴⁾	NA	27.7 ⁽⁴⁾	111 ⁽⁴⁾	329 ⁽⁴⁾	53.9	66.4	580 ⁽⁴⁾	676	0.39
Polychlorinated Biphenyls(PCBs) (EPA 808	2) ⁽³⁾										
Aroclor 1016/1242	µg/Kg	NA	10.9 U	NA	NA	NA	10 U	10 U	NA	530	
Aroclor 1221	ug/kg	NA	10.9 U	NA	NA	NA	20 U	20 U	NA		
Aroclor 1232	µg/Kg	NA	10.9 U	NA	NA	NA	10 U	10 U	NA		
Aroclor 1248	µg/Kg	NA	10.9 U	NA	NA	NA	15.7	51 J	NA	1500	
Aroclor 1254	µg/Kg	NA	50.4 J	NA	NA	NA	10 U ⁽⁵⁾	34	NA	300	
Aroclor 1260	μg/Kg	NA	34.6 J	NA	NA	NA	10 U	10 U	NA	200	
Aroclor 1262	µg/Kg	NA	NA	NA	NA	NA	10 U	10 U	NA		
Aroclor 1268	μg/Kg	NA	NA	NA	NA	NA	10 U	10 U	NA		
	CBs ⁽³⁾ µg/Kg	NA	85 J	NA	NA	NA	15.7	85 J	NA	676	0.39

Notes:

-- No JSCS screening level available.

µg/Kg = micrograms per kilogram .

mg/Kg = milligrams per kilogram

NA = not analyzed

J = Estimated value. For PCB Aroclors, the value was detected at a concentration greater than the method detection limit but less than the method reporting limit or the quantification was based on a limited number of peaks due to matrix interference.

U = The analyte was not detected above the the reported sample quantification limit.

⁽¹⁾ JSCS - Portland Harbor Joint Source Control Strategy (DEQ/EPA Final December 2005, Amended July 2007).

⁽²⁾ Refer to Appendix C, Table C-2 for individual congener results.

⁽³⁾ Total PCBs are calculated by assigning "0" to undetected and EMPC-qualified constituents.

⁽⁴⁾ Total homolog and total congener values could be slightly biased due to detections of congeners in the laboratory method blank and/or internal standard recoveries outside of method control limits.

⁽⁵⁾A trace amount of Aroclor 1254 was detected below the method reporting limit.

= concentration exceeds JSCS Toxicity Screening Level Value.

bold = concentration exceeds JSCS Bioaccumulation Screening Level Value.

Table 6 Basin 53A Dry-Weather Flow and Stormwater Results

		Whole Basin		Norther	n Branch		Southern Branch		Eastern	Branch	JSCS Stormwater SLVs ⁽¹⁾		
		Dry-Weather Flow	Stormwater	Dry-Weather Flow	Stormwater	Stormwater	Dry-Weather Flow	Stormwater	Dry-Weather Flow	Stormwater	-		
		Outfall 53A From 48" Outfall FO050782	Manhole AAA170 Within manhole W10L059-01	Manhole AAA179 Upstream of manhole in 36" Line FO050779	Manhole AAA179 Upstream of manhole in 36" Line W10L059-05	Manhole AAA188 Within manhole W10L059-02	Manhole AAA179 Upstream of manhole in 42" Line FO050781	Manhole AAA179 Upstream of manhole in 42" Line W10L059-03	Manhole AAA179 Upstream of manhole in 24" Line FO050780	Manhole AAA179 Upstream of manhole in 24" Line W10L059-04	Human Health	Human Health	
s Analyte	Units	7/28/2005	12/7/2010	7/28/2005	12/7/2010	12/7/2010	7/28/2005	12/7/2010	7/28/2005	12/7/2010	Fish Consumption ⁽²⁾		Ecological
l Suspended Solids (SM 2540D)												8	
TSS	mg/L	NA	29	NA	7	5	NA	22	NA	61			
l Metals (EPA 200.8)													
Arsenic	μg/L	NA	0.685	NA	0.469	0.483	NA	0.642	NA	0.921	0.14	0.045	150
Cadmium	μg/L	NA	0.139	NA	0.100 U	0.100 U	NA	0.158	NA	0.171		5	0.094
Chromium	μg/L	NA	12.0	NA	9.25	2.64	NA	15.7	NA	39.6		100	
Copper	µg/L	NA	7.97	NA	3.80	5.23	NA	7.45	NA	16.4		1300	2.7
Lead	µg/L	NA	4.24	NA	2.02	3.50	NA	2.75	NA	10.2		15	0.54
Mercury	μg/L	0.0020 U	0.00690 (5)	0.0079	0.00355 (5)	0.00616 (5)	0.0021	0.00623 (5)	0.0020 U	0.0131 (5)	0.146	2	0.77
Manganese	μg/L	NA	212	NA	131	25.7	NA	234	NA	544	100	50	
Nickel	μg/L	NA	2.13	NA	1.24	0.997	NA	2.20	NA	5.16	4600	730	16
Silver	μg/L	NA	0.100 U	NA	0.100 U	0.100 U	NA	0.100 U	NA	0.100 U		100	0.12
Zinc	µg/L	NA	337	NA	272	31.3	NA	573	NA	83.6	26000	5000	36
chlorinated Biphenyl Congeners	(PCBs) (EPA	A 1668A)											
Total PCBs ⁽⁶⁾⁽⁷⁾) µg/L		0.000278 NJ	NA	ND	ND	NA	0.000376 NJ	NA	0.0173 J	0.000064	0.034	0.014

Notes:

-- No JSCS screening level available.

J = Estimated Value. Total PCB concentration includes one or more estimated values due to internal standard recoveries outside of method control limits.

ND = Not detected

NJ = Tentatively identified and estimated. Total PCB congener values are based on a single congener detection, which is unlikely to occur.

U = The analyte was not detected above the reported sample quantification limit.

 $\mu g/L = Micrograms per liter$

mg/L = Milligrams per liter

⁽¹⁾ JSCS SLVs = Portland Harbor Joint Source Control Strategy Screening Level Values (DEQ/EPA Final December 2005, Amended July 2007).

⁽²⁾ The SLVs for chemicals in water taken up by fish for human consumption represent EPA's NRWQC values. If no NRWQC values are available, then DEQ's AWQC values are listed for the constituent.

⁽³⁾ The SLVs for chemicals in water for human ingestion represent the most conservative value between EPA's MCLs and Region 9 PRGs.

(4) The SLVs for chemicals in water for ecological exposure represent EPA's NRWQC values. If no NRWQC values are available, then DEQ's AWQC values are listed for the constituent. If no AWQC values are available, then Oak Ridge National Laboratory Tier II SCV Technology Benchmark values are listed for the constituent.

⁽⁵⁾ Mercury analysis by WPCL SOP M-10.02.

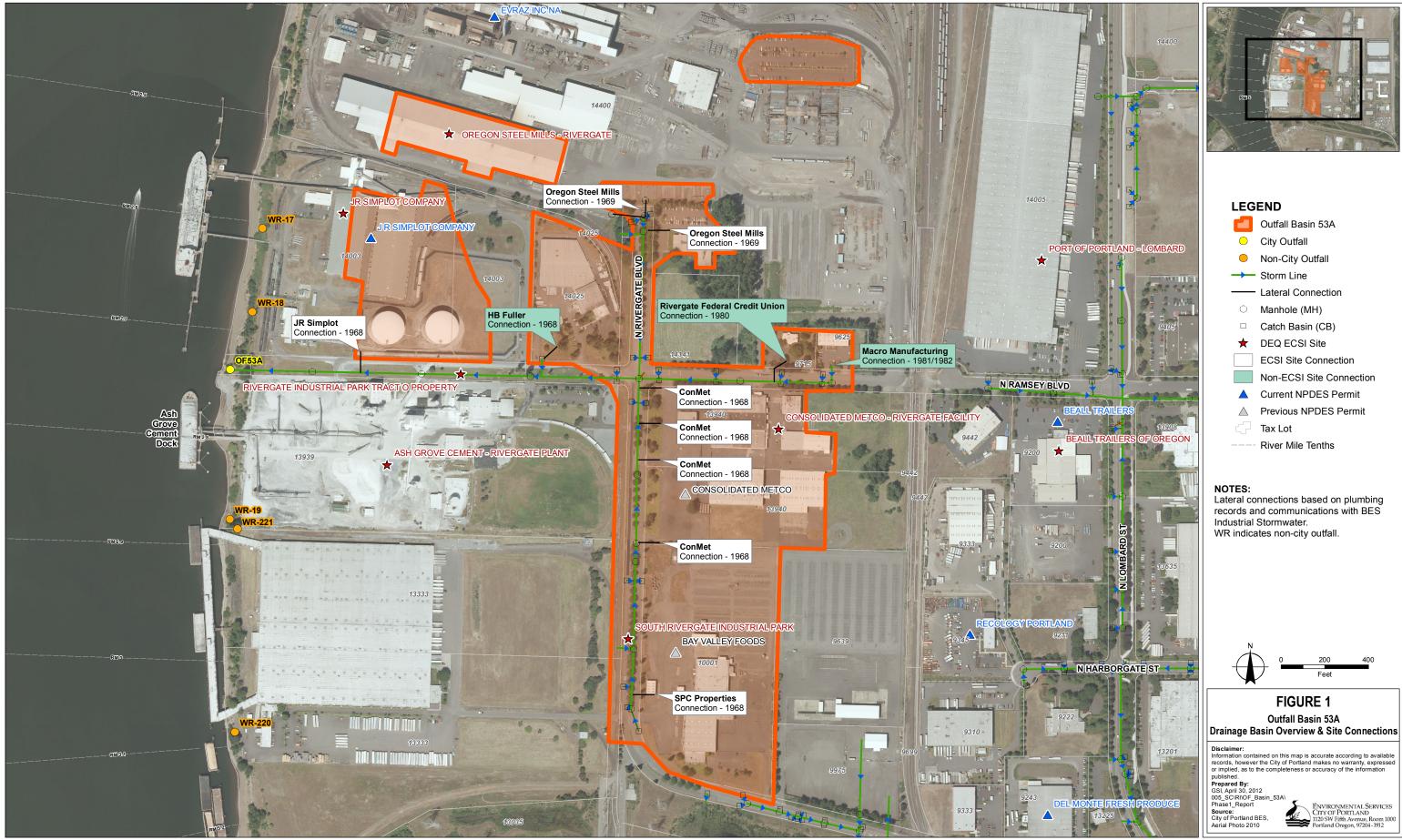
⁽⁶⁾ See Appendix D, Table D-2 for individual congener results.

⁽⁷⁾ Total PCBs are calculated by assigning "0" to undetected and EMPC-qualified constituents.

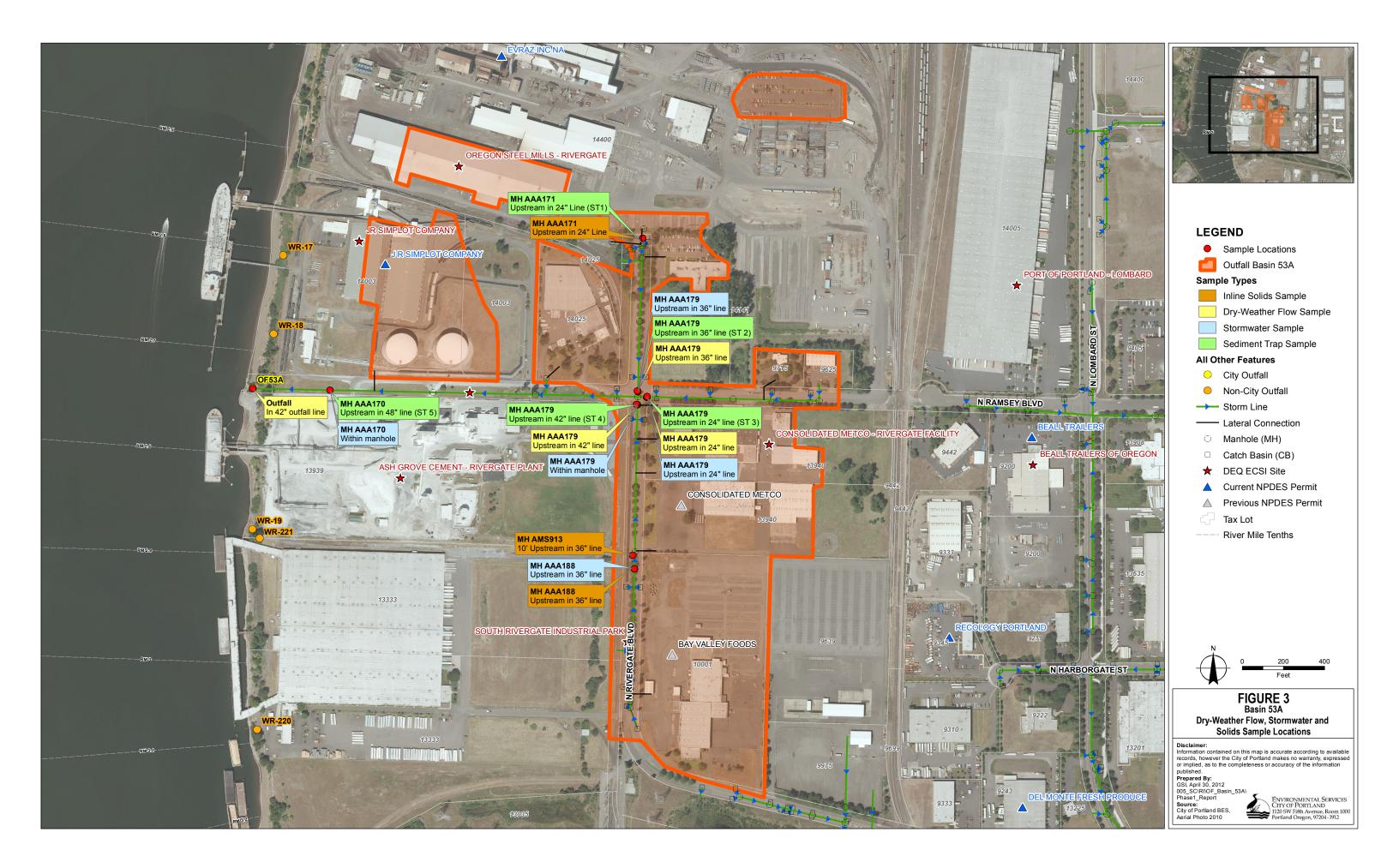
= Highlighted values have been selected by DEQ for initial upland source control screening evaluations.

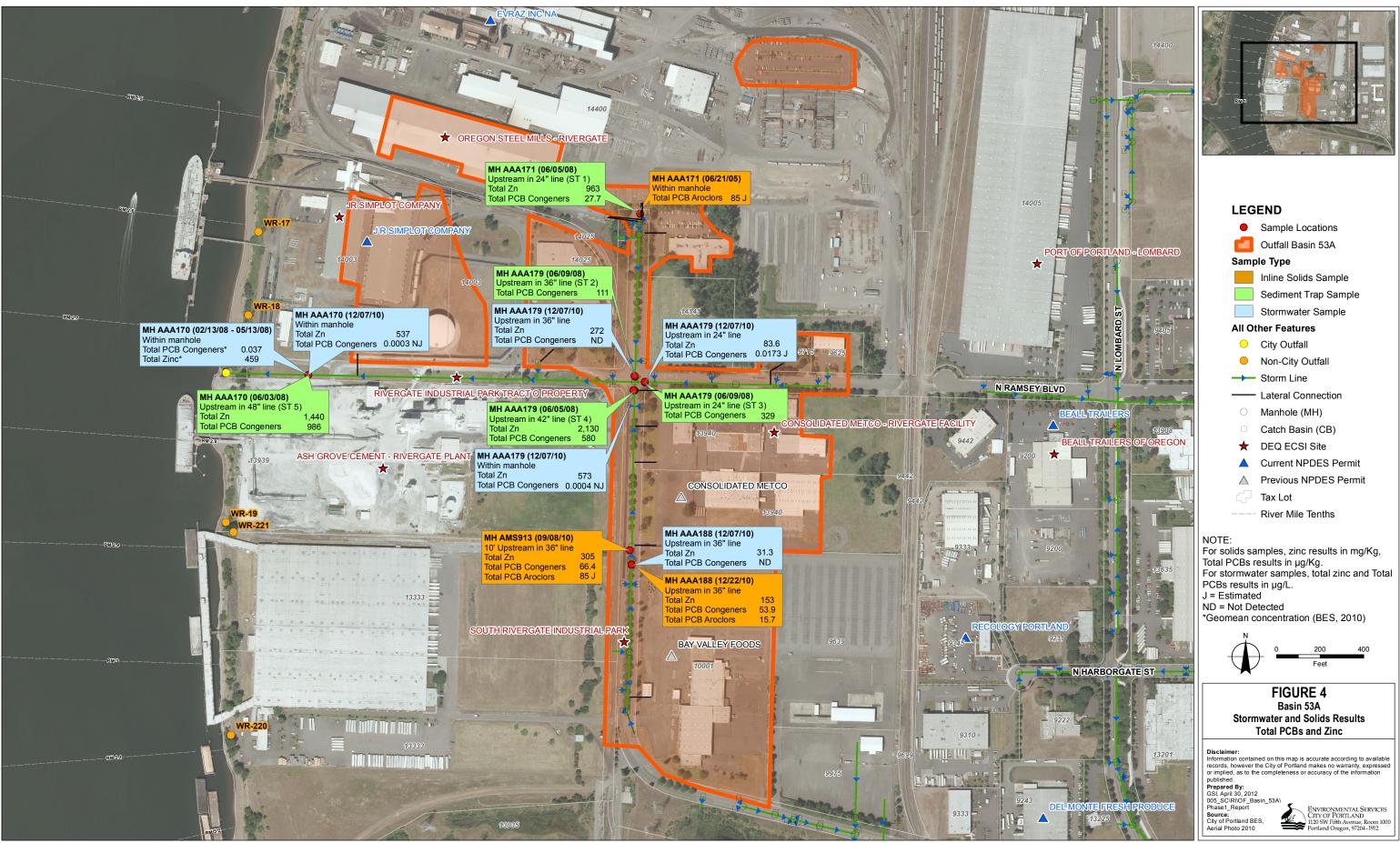
bold = Concentration exceeds DEQ's SLV.

Figures









APPENDIX A Outfall 53A Facility Summaries

Appendix A Outfall Basin 53A Facility Summaries

DEQ ECSI Facilities Located in Basin 53A

- Consolidated Metco (ECSI No. 3295)
- EVRAZ North America (ECSI No. 141)
- JR Simplot (ECSI No. 3342)
- SPC Properties (part of ECSI No. 2980)
- South Rivergate Industrial Park (ECSI No. 2980)

Non-ECSI Facilities Located in Basin 53A

- Macro Manufacturing
- Rivergate Federal Credit Union
- Steelmill Warehouse

DEQ ECSI Facilities Located Adjacent to Basin 53A

- Ash Grove Cement Company (ECSI No. 4696)
- Rivergate Industrial Park Tract O Property (ECSI No. 5307)

Plumbing Records (on CD only)

- Consolidated Metco
- EVRAZ North America
- JR Simplot
- SPC Properties
- Macro Manufacturing
- Rivergate Federal Credit Union
- Steelmill Warehouse

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Consolidated Metco, Inc. 13940 N. Rivergate Blvd. ECSI #3295 (Discharges to Basin 53A)

Site History and Description

The Consolidated Metco, Inc. (ConMet) property consists of two parcels of land totaling approximately 19.2 acres located at the southeast corner of N. Ramsey Blvd and N. Rivergate Blvd. ConMet purchased the two parcels from the Port of Portland in 1964 (Tax Lot 300) and 1966 (Tax Lot 400). Prior to ConMet's ownership, the property was undeveloped. Dredge fill initially was placed on the site by the Port of Portland in the 1940s and filling continued periodically throughout the 1960s (Port of Portland, 1968).

ConMet operated a permanent mold aluminum-casting foundry at the subject property from 1964 until October 2007, when production ceased. The facility was comprised of six buildings including two foundries, a chip reclamation building, a machine shop, a warehouse and hub assembly building, and an office building. In addition to casting operations (aluminum castings, structural plastics, small engine components), transportation industrial components were manufactured at the facility. Currently, the site is vacated except for minor equipment storage; the buildings from the foundry operation still remain (Bureau Veritas, 2009a).

The site is relatively flat with an average elevation of 33 to 34 feet above sea level. Approximately 60 percent of the property and nearly all of the manufacturing areas are paved or are covered by the facility buildings. The eastern section of the property (approximately five acres) is undeveloped and unpaved (Bureau Veritas, 2009a).

Eight spills, leaks, or releases have been recorded for the property since ConMet began operations in 1964 (Bureau Veritas, 2009b). These include:

- 1969 or 1970 Two to three cubic yards of "spent shell core sand" and approximately 200 gallons of quench water containing diluted water-soluble machine coolant were discarded along the current location of the northern side of the Chip Reclamation Building.
- Mid 1980s Spent, water-soluble machine coolant leaked onto the floor of the Machine Shop and seeped to the ground surface outside of the building. Reportedly, some of the coolant was recovered by pumping.
- Early 1990s Rainfall entered a drop box containing spent, absorbent material (containing water-soluble machine coolant) and subsequently drained into a storm sewer catch basin. The catch basin was pumped and cleaned of fluids.
- May 2000 200 gallons of spent, water-soluble machine coolant were spilled from a portable above ground storage tank while the tank was being moved. Approximately 130 gallons of the fluid were recovered from the spill site and the storm sewer was flushed.
- February 2001 Water-soluble machine coolant leaked from underground piping used to transfer coolant from the Chip Reclamation Building to the Machine Shop. An

estimated 80 gallons of water mixed with 7 to 8% coolant were released to an onsite catch basin and then the Willamette River. The pipe was repaired, soil was excavated, and free liquid was recovered.

- 2003 or 2004 Approximately 3 gallons of wastewater containing Pine-Sol[®] household cleaner were poured into a storm sewer catch basin. The catch basin was pumped and cleaned of fluids.
- August 2003 An estimated 15 gallons of diluted, water-soluble machine coolant were released to the storm sewer and conveyed to the Willamette River after a fire department operation. The storm sewer was flushed and vacuumed, and an absorbent boom was placed on the river near Outfall 53A.
- March 2004 An estimated five gallons of diluted water-soluble coolant leaked from an aboveground fitting in the vicinity of the Chip Reclamation Building and the Machine Shop. The leaked coolant flowed to a nearby catch basin. The storm sewer system was flushed and vacuumed downstream of the leak.

Stormwater Conveyance System

Plumbing records (Multnomah County, City of Portland) for the property date back to 1964 at the inception of ConMet's operations. The 1964 permit indicates that roof drains were connected to "tile fields", and sanitary wastewater discharged to an on-site septic tank. The Basin 53A stormwater conveyance system was constructed by the Port of Portland between 1968 and 1970. As-built drawings and plumbing records indicate that ConMet was connected to the public conveyance system in 1968. The ConMet facility was connected to the public stormwater system before the City annexed the public roads (N. Rivergate and N. Ramsey) in 1979 and the ConMet property in 1980. Stormwater from the facility is conveyed through 28 catch basins and approximately 47 roof drains into four main stormwater lines (Bureau Veritas, 2009a) that are connected to the public conveyance system in N. Rivergate Blvd at the locations shown on Figure A-1. The facility had historically operated under an NPDES discharge permit, but the permit was cancelled in 2008 after ConMet filed a No Exposure Certification for Exclusion from NPDES Stormwater Permitting with DEQ because manufacturing operations ceased in 2007 (Bureau Veritas, 2009a). Records indicate that NPDES benchmarks were met during the majority of sampling events (DEQ, 2007).

Site Investigations

At the request of DEQ, ConMet collected stormwater and catch basin solids samples at the facility between March 2007 and January 2008 (Bureau Veritas, 2009a). PCBs, phthalates, and PAHs were detected at concentrations exceeding JSCS SLVs in one or more of the solids samples. Copper, lead, zinc, PAHs, and bis(2-ethylhexyl)phthalate were detected at concentrations exceeding SLVs in one or more of the stormwater samples [the samples were analyzed only for five metals (chromium, copper, lead, mercury and zinc)]. Only stormwater samples collected in January 2008 were analyzed for PCBs. PCBs were not detected in these stormwater samples, but method detection limits were elevated (Bureau Veritas, 2009a).

In 2009, ConMet conducted a subsurface investigation of the property and an investigation and cleaning of the facility's storm sewer system. The objective of the subsurface investigation was to evaluate the possible presence of contamination in areas of historic releases, areas where

hazardous materials and waste had been stored, and within the dredged fill material (Bureau Veritas, 2009b). The investigation and cleaning of the facility storm sewer system was carried out in response to DEQ recommendations (DEQ, 2009). Storm sewer pipes and ancillary lateral piping were inspected by video and jet-washed. After jet-washing, composite solids and rinsate samples were collected near the connections to the public stormwater conveyance system. Fifteen significant groundwater and subsurface soil infiltration locations were identified within the site's storm lines from the video survey. As a result, additional subsurface investigations were conducted to evaluate whether these media were contaminated. PCBs, phthalates, PAHs, and/or several metals were detected in composite solids and rinsate samples generated from line cleaning activities, and in soil and groundwater samples. Additionally, chlorinated furans were detected in soil samples collected from two soil borings advanced in the eastern, undeveloped portion of the property.

Total PCBs were detected in solid samples (2007 catch basin and 2009 cleanout samples) from the site stormwater conveyance system at concentrations up to 2,690 μ g/Kg, with an average concentration of 1,160 μ g/Kg (Bureau Veritas, 2009a).

Metal concentrations in the 2009 cleanout solids were as follows (catch basin solids samples were not analyzed for metals):

- Aluminum up to 71,600 mg/Kg with average of 37,666 mg/Kg
- Arsenic up to 18.3 mg/Kg, with average of 14 mg/Kg
- Cadmium up to 5.09 mg/Kg, with average of 2.8 mg/Kg
- Chromium up to 577 mg/Kg, with average of 250 mg/Kg
- Copper up to 2220 mg/Kg, with average of 110.7 mg/Kg
- Lead up to 315 mg/Kg, with average of 184 mg/Kg
- Mercury up to 0.255 mg/Kg, with average of 0.167 mg/Kg
- Nickel up to 76.7 mg/Kg, with average of 49.6 mg/Kg
- Zinc up to 3,760 mg/Kg, with average of 2,100 mg/Kg

Based on its review of the data, ConMet concluded that contaminants in the stormwater system are most likely attributable to contaminated dredge material placed on the property prior to ConMet's ownership (Bureau Veritas, 2009a).

ConMet submitted a storm sewer post-cleanout performance work plan to DEQ in September 2009 and a proposal for storm sewer system repair in October 2009 (Bureau Veritas, 2009c; 2009d). DEQ commented on both work plans in January 2010 and included recommendations for additional sampling of stormwater and inline solids (DEQ, 2010a; 2010b). In accordance with their storm sewer system repair plan, ConMet repaired some of the lines where sediments and groundwater were potentially infiltrating the system (Bureau Veritas, 2010). The site is currently conducting post-cleanout stormwater monitoring and, to date, has completed two rounds of stormwater sampling. ConMet did not agree to DEQ's request for collecting additional inline solids data. In November 2011, DEQ issued a Conditional No Further Action Determination to the site, requiring completion of the Source Control Evaluation to evaluate impacts of site releases to the Willamette River via the site stormwater system (DEQ, 2011a; 2011b).

ConMet vacated the site in 2008. The site currently is undergoing redevelopment by Archer Daniels Midland as a liquid sugar terminal. Redevelopment, under the City's Stormwater Management Manual, will include demolition of the North Foundry building and other buildings in the northern portion of the site, removal and replacement of portions of the onsite stormwater drainage system, and installation of stormwater treatment.

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EVRAZ, Inc. North America (aka Oregon Steel Mills and Evraz Oregon Steel) 14400 North Rivergate Boulevard ECSI #141 (Discharges to Basin 53A)

Site History and Description

The EVRAZ property consists of 145 acres located at the northern terminus of Basin 53A. Gilmore Steel Mills, a predecessor of EVRAZ, purchased the property from the Port of Portland (Port) in 1967 (Exponent, 2004a). In 1987, Gilmore Steel, Inc. changed its name to Oregon Steel Mills, Inc. (OSM) (DEQ, 1999). OSM was then acquired by the Evraz Group S.A. and renamed Evraz Oregon Steel Mills, Inc. in 2007 (DEQ, 2010a). The facility was renamed EVRAZ, Inc. North America (EVRAZ) in 2008.

Prior to the construction of the steel mill which was completed in 1969, the property was undeveloped. Dredge fill initially was placed on the site by the Port of Portland in 1942 and filling was continued periodically throughout the 1960s (Port of Portland, 1968). An oil sump, called the Ramsey Lakes Sump, was present in the southwest corner of the site between approximately 1942 and 1960. The sump was used for the disposal of bilge water, slop oil and other waste materials prior to EVRAZ ownership. After its closure in approximately 1960, the sump was dewatered and filled (Exponent, 2001; 2002). No known industrial activities occurred on the property between the closure of the sump and the construction of the steel mill (DEQ, 2010a).

Industrial steel operations (steel production, steel processing and related ancillary operations) occurred on the site from 1967 to 2003. Beginning in May 2003, the facility's melt shop was idled, and only steel processing operations were conducted. In the summer of 2005, EVRAZ began a major facility expansion and redevelopment project to enable the manufacture of steel pipe (RETEC, 2005; 2006a). Current steel mill facilities include industrial process buildings (combination mill, cut to length facility, pipe mill, coating mill and melt shop), a process water cooling pond, office buildings, parking lots, and aggregate storage and staging areas. However, the pipe and coating mills built during the redevelopment project are currently idle due to market conditions (DEQ, 2010a).

The site has an air quality permit from DEQ designating annual site emission limits of 612 tons per year particulate matter and 5 tons per year lead (DEQ, 2010b).

Stormwater Conveyance Systems

Nine drainage basins (basins A through I) are currently delineated on the EVRAZ site. Storm sewers convey runoff to two outfalls: EVRAZ outfalls 002 and 003 (Evraz, 2009). A third outfall, outfall 001, was made inactive in February 2009. It is only available for use in emergency situations when the capacity of the system is overwhelmed (AECOM, 2009). Currently, the majority of the facility's stormwater is discharged directly into the Willamette River through outfall 003 (a.k.a., WR 24).

EVRAZ outfall 002, also known as the Rivergate Outfall, discharges to the Basin 53A stormwater conveyance system via a private line that connects to City manhole AAA171 (Figure A-1). Plumbing records (Multnomah County, City of Portland) for the property date back to 1968 at the inception of EVRAZ operations. The Basin 53A conveyance system was constructed by the Port of Portland between 1968 and 1970. As-built drawings and available plumbing records indicate that EVRAZ connected to the public conveyance system by 1969. The EVRAZ facility was connected to the public system before the City annexed the public roads (N. Rivergate and N. Ramsey) in 1979 and the EVRAZ property in 1989.

Prior to 2005 redevelopment activities, EVRAZ outfall 002 received runoff from a 14.8 acre drainage basin that included a storehouse and maintenance shop, parking areas, an administration building, a carpenter shop, and a surface processing facility. Additional drainage from the administration building and parking lot areas discharged to the public Basin 53A conveyance system further downstream at City manhole AAA173 (RETEC 2005; BES, 2010).

Drainage areas discharging to outfall 002 were largely reconfigured during redevelopment activities beginning in 2005. A large pipe mill was constructed in 2005 on the southwest corner of the site. Eighty percent of the pipe mill's roof runoff was added to stormwater draining from the initial 14.8 acre basin (RETEC, 2005). In 2006 and 2007, a new employee parking lot, pipe coating mill, and pipe transport and storage area were constructed and the area draining to outfall 002 was significantly reconfigured. As part of its redevelopment, EVRAZ completed a source control evaluation (SCE) for stormwater and implemented many stormwater upgrades (which also serve as source control measures) in an effort to minimize discharge of stormwater particulates into the public stormwater system (RETEC, 2006a). These source control measures, including a sand filter and bioswales, were implemented during final redevelopment activities in early 2007.

Currently, EVRAZ outfall 002 receives stormwater from three drainage basins (basins D, G, and I), representing an estimated 8.2 acres of impervious surface area and 1.2 acres of pervious surface area. Stormwater discharging from drainage basin D is comprised of 80 percent of the pipe mill's roof runoff. Drainage basin G consists of an employee parking area, and basin I includes pipe transport and storage areas. All stormwater discharging to EVRAZ outfall 002, with the exception of the pipe mill roof runoff, passes through a sand filter or bioswale (DEQ, 2010a). Runoff from the administration building and parking lot still discharges to the Basin 53A conveyance system via a separate lateral to City manhole AAA173, shown on Figure A-1 (BES, 2010).

EVRAZ submitted an updated stormwater pollution control plan in May 2009 and a stormwater loading work plan in October 2009 detailing methods for controlling stormwater pollution and evaluating the quality of discharging stormwater and loading to the Willamette River (Evraz, 2009; AECOM, 2009). To confirm where stormwater discharges entered the public conveyance system and more clearly delineate drainage areas, EVRAZ conducted storm drain field verification and cleaning activities between September 2009 and March 2010 (AECOM, 2010).

EVRAZ monitored discharges to outfall 002 in accordance with their NPDES 1200-Z permit until 2009, after which the outfall received a monitoring waiver. Records indicate that NPDES benchmarks occasionally have been exceeded for copper, pH, total suspended solids and zinc. EVRAZ is currently collecting stormwater data to assess contaminant loading to the Willamette River from stormwater discharges at the facility and to determine the need, if any, for further source control measures (DEQ, 2010a). The sample location selected to monitor discharges from OSM to the public conveyance system includes drainage from basins D, G and I but does not include discharges from the administration building and associated parking area.

Site Investigations

Remedial investigation (RI), removal actions and source control evaluation activities have been conducted on the property pursuant to a Voluntary Remedial Investigation Source Control Measures Agreement between DEQ and EVRAZ (DEQ, 2000). Contaminants of interest identified by DEQ for the site include semi-volatile organic compounds, volatile organic compounds, PAHs, PCBs, fuels and metals (DEQ, 2010a).

Solids samples were collected from sixteen catch basins during 2002 Phase I RI activities at the site (DEQ, 2010a). PCBs were detected in all of the samples with concentrations up to 2,130 μ g/Kg total PCB Aroclors, with an average concentration of 455 μ g/Kg. Additionally, PCBs have been detected at concentrations as high as 4,480 μ g/Kg in surface soil samples collected from the site (DEQ, 2010a). Catch basin solids draining directly to OF53A (sample locations SD-5, SD-20, and SD-21) ranged from 35 to 1,020 μ g/Kg total PCBs (Exponent, 2004b, Exponent 2003).

Metals were detected in sitewide catch basin solids samples at the site as follows (DEQ, 2010a):

- Arsenic up to 12 mg/Kg, with average of 5.59 mg/Kg
- Cadmium up to 14 mg/Kg, with average of 2.93 mg/Kg
- Chromium up to 7,000 mg/Kg, with average of 2,195 mg/Kg
- Copper up to 460 mg/Kg, with average of 208 mg/Kg
- Lead up to 670 mg/Kg, with average of 133 mg/Kg
- Manganese up to 68,000 mg/Kg, with average of 19,300 mg/Kg
- Mercury up to 0.17 mg/Kg, with average of 0.078 mg/Kg
- Nickel up to 170 mg/Kg, with average of 69.8 mg/Kg
- Zinc up to 2,400 mg/Kg, with average of 851 mg/Kg

Zinc concentrations in catch basin solids draining directly to OF53A (sample locations SD-5, SD-20, and SD-21) ranged from 300 to 2,000 mg/Kg (Exponent, 2004b, Exponent 2003. Petroleum hydrocarbons and PAHs also were detected in the catch basin solids samples (DEQ, 2010a).

One area of the site (the Mosley Shear Area) was identified by DEQ as a "Hot Spot" area. Significantly elevated concentrations of PCBs were detected this area. Soil and slag removal was conducted in the Shear area in early 2006. Total PCB concentrations up to 12,500 μ g/Kg remain in soil in this area, based on confirmation soil sample results (RETEC, 2006b).

In 2007, EVRAZ advanced soil borings at various locations across the site to analyze the underlying dredge fill material. PCB Aroclors were not detected in the majority of the dredge fill samples. With the exception of one soil boring in the former Ramsey Lakes Sump area,

detections of individual PCB Aroclors did not exceed 80 μ g/Kg in any of the dredge fill samples (RETEC, 2007).

In October 2010, DEQ prepared a staff report presenting proposed source control measures (SCM) for the EVRAZ site (DEQ, 2010a). The report describes the onsite conveyance system and drainage basin changes as described above. Additionally, the report also presents the planned stormwater monitoring program. In December 2011, DEQ issued a Record of Decision for Stormwater Source Control Measures at the site (DEQ, 2010). The ROD selected source control measure to address contaminants associated with upland soils that are entrained in stormwater runoff and transported to the Lower Willamette River via OF53A (i.e., Rivergate Outfall 002) include structural best management practices that were implemented in the context of the construction of the new spiral pipe mill (installing sand filter, constructing bioswales and regrading to promote infiltration). During the 2010/2011 storm season, EVRAZ collected two of the four samples required to evaluate contaminant stormwater loading at Rivergate Outfall (002) (AECOM, 2011). EVRAZ is also currently collecting performance stormwater monitoring data to evaluate the need, if any, for additional source control measures.

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JR Simplot 14003 North Rivergate Blvd. ECSI # 3343 (Discharges to Basin 53A)

The JR Simplot site consists of approximately 24 acres. JR Simplot purchased the facility in 2000. Prior ownership and operation of the site was by Unocal Corporation. The facility has operated as a bulk anhydrous ammonia and urea marine terminal since 1968 (J.R. Simplot, 2002).

No other information regarding site history and operations was found.

Diesel-contaminated soil was encountered at about 18 feet below ground surface in an excavation completed at the site for construction purposes. DEQ subsequently added the site to the ECSI database and, in a letter dated June 13, 2002, notified JR Simplot that DEQ would conduct a site assessment review (DEQ, 2002a, b).

In June 2002, a subsurface investigation was conducted along a proposed railroad track bed at the site. This investigation was apparently conducted outside of DEQ's site assessment review process. Seven direct-push borings were advanced to eight feet below ground surface. Soil samples were analyzed for metals, VOCs, PAHs, and PCBs. Groundwater was not encountered during the investigation. No VOCs or PCBs were detected in any of the samples analyzed. Arsenic, barium, chromium, petroleum hydrocarbons, and PAHs were detected in the soil samples (Kleinfelder, 2002). No other information was available at DEQ for review.

The site has an air quality permit from DEQ designating annual site emission limits of 28 tons per year particulate matter (DEQ, 2010).

Plumbing records (Multnomah County, City of Portland) for the property date back to 1968 at the inception of JR Simplot predecessor's (Collier Chemical) operations. The Basin 53A conveyance system was constructed by the Port of Portland between 1968 and 1970. As-built drawings and available plumbing records indicate that JR Simplot likely connected to the public conveyance system during this time period. The JR Simplot facility was connected to the public system before the City annexed the public roads (N. Rivergate and N. Ramsey) in 1979 and the JR Simplot property in 1989.

The site maintains NPDES permits for direct discharges to the Willamette River from two private outfalls [site outfalls 1 and 2 (WR 12 and WR 13, respectively)] and to the Basin 53A stormwater conveyance system via site outfall 3. Site outfall 3 is connected by a private line to the public stormwater conveyance system at a point upstream of manhole AAA170 and downstream of manhole AAA177 (Dean, 2007). The exact location of the connection is not identified in the available records. No NPDES benchmark exceedances have occurred at outfall 3 over several years of monitoring.

Other than sampling conducted for NPDES permit compliance, no information regarding stormwater system sampling was found on file at DEQ.

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SPC Properties 9901 and 10001 North Rivergate Blvd. (included in ECSI #2980) (Discharges to Basin 53A)

The property was purchased from the Port of Portland in 1978 by SPC Properties, LLC. It was leased to Steinfeld Products Company in 1978 and then to Dean Foods in 1999. Dean Foods purchased the property in 2004 (Steinfeld, 2008). SPC Properties operated a food processing plant that included pickling operations. Additional information on site operations was not available.

Two leaking underground storage tank (LUST) records associated with this site are on file with DEQ. LUST 26-90-0468 was reported as a waste oil tank release in 1990. The release was limited to soil and a soil cleanup was conducted; an NFA was issued in 1993. LUST 26-96-0568 was due to a small diesel release that occurred in 1996 as part of a UST decommissioning. Petroleum constituents were not detected in soil samples collected from the tank excavation. DEQ determined that no further action was warranted (DEQ, 2001).

DEQ has not identified COI for the site. However, based on the LUST records, petroleum hydrocarbons may be potential COI associated with the facility.

Plumbing records (Multnomah County, City of Portland) for the property date back to 1968. The Basin 53A conveyance system was constructed by the Port of Portland between 1968 and 1970. As-built drawings and available plumbing records indicate that the SPC property was connected to the public conveyance system during this time period. The SPC facility was connected to the public system before the City annexed the public roads (N. Rivergate and N. Ramsey) in 1979 and the SPC property in 1989.

The site has operated under 1200Z and 100J NPDES permits in the past. Other than sampling conducted for NPDES permit compliance, no information regarding stormwater system sampling was found on file at DEQ.

No records of source control measures implemented at the site were available.

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South Rivergate Industrial Park North Lombard and North Rivergate Boulevard ECSI #2980 (Sites discharging to Basin 53A noted below)

DEQ identified potential contaminant sources to a portion of the Willamette River between River Mile 1.0 and 3.0 in March 2001. DEQ's evaluation was conducted before the U.S. Environmental Protection Agency expanded the definition of the Portland Harbor Superfund Site. In DEQ's Strategy Recommendation for the South Rivergate Industrial Park (DEQ, 2001), DEQ reviewed environmental records numerous sites. The site and potential environmental concerns are briefly summarized below:

- Alcatel Submarine Networks, Inc./ STC Submarine Systems, Inc.*
 - VOC emissions
 - o Hazardous waste generators of spent halogenated and non-halogenated solvents
 - o General storm water discharge permit for non-contact cooling water
- Ash Grove Cement Company (ECSI No. 4696)
 - o See page 19 of this Appendix
- Columbia Grain Inc.*
 - Mineral oil applied for dust-suppression
 - Conditionally Exempt Generator of hazardous waste including used oil and solvents
 - Leaking underground storage tank
 - Two documented spills to Willamette River (lube oil and red diesel)
- Consolidated Metco (ECSI No. 3295)
 - Information regarding the Consolidated Metco is managed separately in DEQ's ECSI database (ECSI #3295) and information associated with this facility is summarized separately (see page 3 of this Appendix).
- Fort James (Georgia Pacific) *
 - Registered underground storage tank
 - o Report of oil slicks on Willamette River near site
- Portland Bulk Terminal 5/Kinder-Morgan/Hall-Buck Marine (ECSI No. 1686, a.k.a., Blue Lagoon)
 - Materials handled at the site included coal, coke, sulfur, potash, soda ash, bentonite clay, and talc
 - Chromium-contaminated fill
 - Elevated levels of chromium and the PCB Aroclor 1248 were detected in the slag and in pond sediment
 - Elevated concentrations of metals (arsenic, chromium, lead, manganese, iron and nickel) in groundwater (EPA's Maximum Contaminant Level)
- SPC Properties/White Cap/Steinfeld Products Company*
 - o See page 14 of this Appendix

- Union Oil Company (ECSI 329¹)/UNOCAL/Rivergate Terminal (ECSI No. 3343)
 - Bulk handling of ammonia and urea, primary constituents of fertilizers. Synthetic urea may contain a number of trace metals
 - Small Quantity Generator (SQG) of hazardous waste
 - Disposed of the caustic/solvent tank contents as a Large Quantity Generator of hazardous waste
 - Entered in DEQ's ECSI database in 1988 and issued a no further action (NFA) determination
 - DEQ AQ permits for urea dust emissions
- Notes:* indicates DEQ has not opened an ECSI number or file for the facility.Bold indicates the facility stormwater discharges to the Basin 53A conveyance
system.

DEQ Conclusions

Based on the findings presented in the strategy recommendation, DEQ:

- Entered the Rivergate Area into ECSI as an area-wide site.
- Designated Port of Portland Terminal 5 area as separate ECSI site due to concerns about sediment contamination.
- Determined further site discovery or assessment work in Rivergate Area at sites other than Oregon Steel Mills or the Port of Portland property appears to be a low priority.
- Referred the Oregon Steel and Port of Portland sites to the Voluntary Cleanup Program for further evaluation.

References

- DEQ. 2001. Strategy Recommendation for the South Rivergate Industrial Park. ECSI No. 2980. DEQ Site Assessment Program. March 1, 2001.
- DEQ. 2012. Environmental Cleanup Site Information Database Site Summary Full Report Details for Site ID 329, Union Chemical Division. Download from DEQ's website on April 24, 2012.

¹ DEQ placed this Union Chemical Division (Union Oil Company of California) site in "historical status" in July 2010. Based on documentation provided by the City of Portland, DEQ determined that the anhydrous ammonia spill was likely associated with the JR Simplot site at 14003 N. Rivergate and Union Oils association with this address (DEQ, 2010).

Non-ECSI Facilities Located in Basin 53A

The Basin 53A conveyance system was constructed by the Port of Portland between 1968 and 1970. As-built drawings and available plumbing records (Multnomah County, City of Portland) were reviewed to determine when the following properties were connected to the public conveyance system. System as-builts and plumbing records (Multnomah County, City) for three non-ECSI sites within Basin 53A were reviewed and are summarized below.

Macro Manufacturing, 9625 N. Ramsey Blvd. The property has been occupied by Macro Manufacturing Company since 1981. Macro Manufacturing is a machine shop that manufactures housings, shafts, wheels, gear blanks, screws, nuts, bearing housings and special threads (Macro, 2007). A City plumbing record indicates that a "new one-story warehouse" was connected to the public stormwater conveyance system at manhole AAA183 in late 1981/early 1982. This facility was connected to the public system after the City annexed the public roads (N. Rivergate and N. Ramsey) in 1979 and before the property was annexed in 1989.

Rivergate Federal Credit Union, 9715 N. Ramsey Blvd. The property has been occupied since at least 1979 by the Rivergate Federal Credit Union (formerly Oregon Steel Mills Credit Union) (Rivergate CU, 2007). A Multnomah County plumbing record indicates that the property was connected to the public stormwater conveyance system in 1980. The exact location of the connection is not clear on the plumbing record but appears to be immediately downstream of a City catch basin located in the N. Ramsey Blvd. right-of-way, in front of the property. The facility was connected to the public system after the City annexed the public roads (N. Rivergate and N. Ramsey) in 1979 and before the property was annexed in 1989

Steelmill Warehouse, LLC 14025 N. Rivergate Blvd. The property is currently owned by Steelmill Warehouse, LLC. Polk Directory listings show HB Fuller Co Glue operating at the site in 1990 and HB "Slnts & Ctsngs" in 2000 (Polk, 1990 and 2000). The BES Industrial Stormwater Aquarius database shows HB Fuller (adhesive facility) out of business in 2009 and replaced by High Temp (concrete casting facility).

The first apparent connection to the public stormwater system is indicated in a 1968 Multnomah County plumbing inspection record with Collier Chemical listed as the site owner. This facility was connected to the public system before the City annexed the public roads (N. Rivergate and N. Ramsey) in 1979 and the property in 1989.

According to a 2000 City plumbing permit, stormwater from a portion of the site currently drains into an on-site "pond". As part of site redevelopment in 2000, a stormwater treatment facility was constructed to treat site stormwater before it discharges to the City conveyance system. The site has qualified for an NEC since 2002. The pond drains to an adjacent catch basin which, along with runoff from a catch basin in what appears to be a paved parking area, discharges to catch basin ANJ309. Catch basin ANJ309 is connected to the public stormwater conveyance system in N. Ramsey Blvd, upstream of manhole AAA178.

References

Macro. 2007. Macro Manufacturing Company website, http://www.macromfg.com/. Accessed September 15, 2007.

Polk. 1990. Portland City Directories. R. L. Polk & Co. 1990.

Polk. 2000. Portland City Directories. R. L. Polk & Co. 2000.

Rivergate CU. 2007. Rivergate Federal Credit Union website, http://www.rivergatecu.com/. Accessed September 15, 2007.

ECSI Facilities Located Adjacent to Basin 53A

Ash Grove Cement Company ECSI #4696 (Discharges to Willamette River)

Ash Grove Cement processes calcium carbonate-containing raw material such as limestone and dolomite to produce lime. High temperature calcimatic kilns are used to drive off carbon dioxide and form quick lime (CaO). These kilns generate temperatures that are high enough to allow incineration of off specification oil (off-spec oil) under EPA and DEQ-approved permits (DEQ, 2001).

Ash Grove operates under an NPDES permit for discharge of calcium oxide-containing water to the Willamette River. In 1994, a notice of non-compliance was issued by DEQ in 1994 due to the discharge of water with elevated pH. The facility reported a clay and water mixture was discharging to the Willamette River from an outfall in 1998. It was determined that the mixture was kaolin clay and water. Because the release was limited and did not involve a toxic or hazardous substance, no further action was required by DEQ (DEQ, 2001).

Off-specification (off-spec) oil incineration is conducted under a DEQ air quality discharge permit first issued in 1994. In its response to EPA's 104(e) information request, Ash Grove indicates that on-specification (on-spec) and off-spec used oil was used to fire the kilns at the Rivergate facility (Ash Grove, 2008). On-spec and off-spec oil are defined as used oil containing no more than 2 ppm and 49 ppm PCB, respectively. On-spec oil was fired in the kilns from 1978 until the kilns were decommissioned in May 2006. Off-spec was used to fire the kilns from 1988 until 2006. In its 104(e), Ash Grove indicates that it has "two to three boxes of used oil records" which include the PCB content of individual used oil deliveries; these records were not included in its response.

The site has an air quality permit from DEQ designating annual site emission limits of 98 tons per year particulate matter (DEQ, 2010).

References

- Ash Grove. 2008. Response to EPA's 104(e) First Request for Information, Ash Grove Cement Company, Portland Harbor Superfund Site. October 2008.
- DEQ. 2001. Strategy Recommendation for the South Rivergate Industrial Park. DEQ Site Assessment Program. March 1, 2001.
- DEQ. 2010. Air Quality Permit Detail Report updated October 2008. DEQ Facility Profiler. http://deq12.deq.state.or.us/FP20/FPDetail.aspx?siteid=3750

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Rivergate Industrial Park Tract O Property N. Ramsey Boulevard ECSI #5307 (No Storm Connection to City System)

The Tract O property consists of approximately 2.8 acres located adjacent to the basin boundary, paralleling the southern property boundary of the JR Simplot site (see Figure 1 in the main report). The site has been owned by the Port of Portland (Port) since the 1940s, and is largely undeveloped and unpaved, except for the northern property boundary that comprises the westward extension of N. Ramsey Boulevard. The property also includes road access easements for JR Simplot and Ash Grove Cement, and easements for natural gas pipelines and the City's stormwater line that extends to Outfall 53A (DEQ, 2010).

The Port is currently in the process of selling Tract O to JR Simplot with plans to construct three rail car lines through the center of the property. As part of the sales process, the Port entered into a letter agreement with DEQ in March 2010 to conduct a site investigation and prepare a report of the investigation findings. In July 2010, DEQ issued a No Further Action (NFA) decision for the site (DEQ, 2010).

Currently, no stormwater collection facilities are located on the site, and all rainfall infiltrates into the ground, except at the westernmost portion of the property which slopes steeply toward the Willamette River. The Basin 53A stormwater conveyance line extends beneath the entire length of Tract O from the intersection of N. Ramsey Boulevard and N. Rivergate Boulevard to the outfall (DEQ, 2010).

Planned development of the property by J.R. Simplot could change stormwater flow and management at the site. The City of Portland has indicated that stormwater may need to be treated by a vegetated pollution reduction facility prior to infiltration or discharge to the City's conveyance system.

Although no surface stormwater pathways to the river have been identified (with the exception of the westernmost portion of the property, adjacent to the river), groundwater is present beneath the property at depths ranging from 5 to 20 feet below ground surface, and portions of the Basin 53A conveyance system likely lie beneath the groundwater table. Dry weather flow has been observed at Outfall 53A indicating a potential preferential pathway for groundwater into the stormwater pipeline (DEQ, 2010).

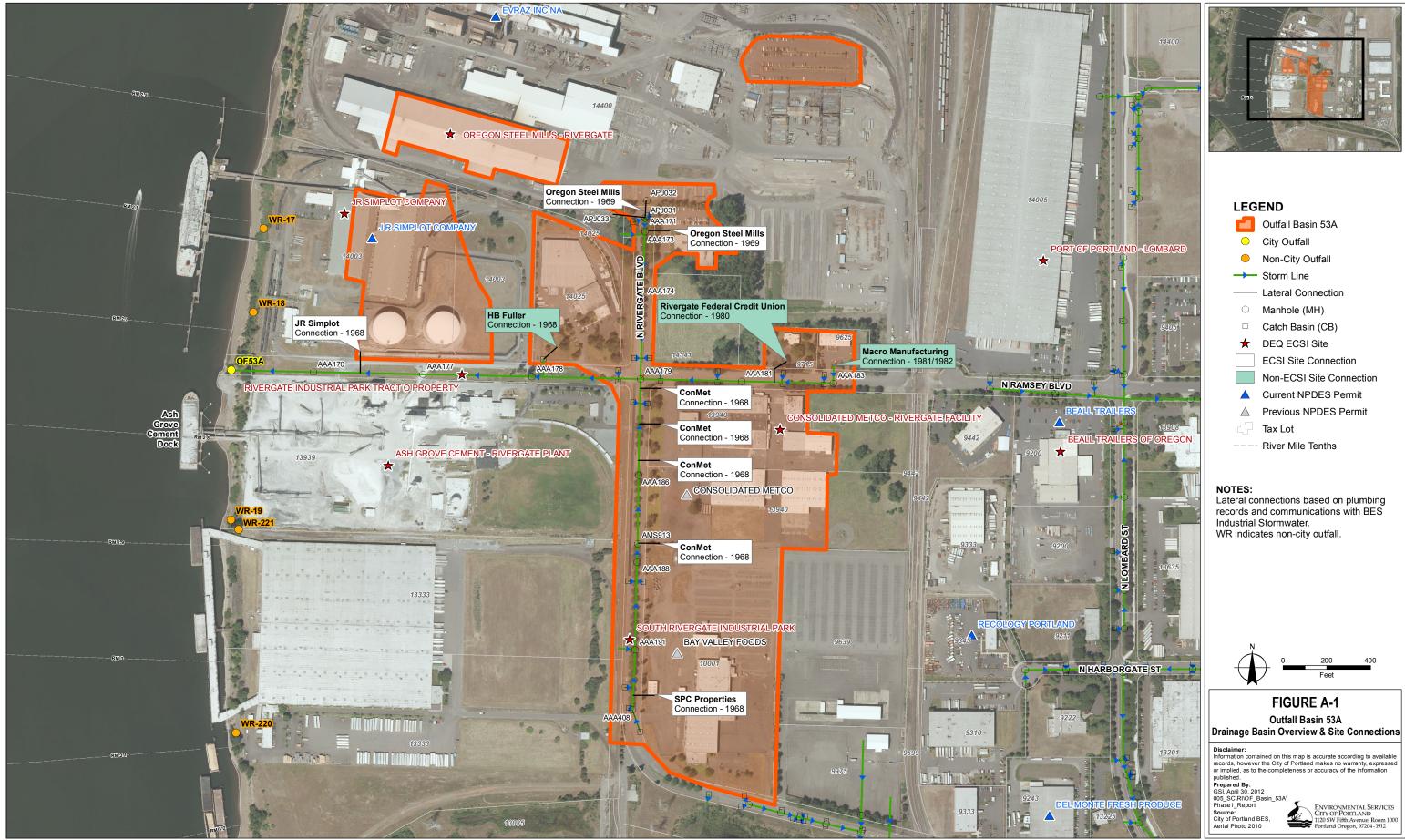
As part of the Port's 2008 Phase II Subsurface Soil Investigation, ten soil borings were drilled at Tract O and soil and groundwater samples were collected. Ten soil samples were collected at the water table ranging from 5 to 10 ft. Soil samples were analyzed for TPH, metals, pesticides, PCBs, VOCs, SVOCs, and PAHs. Six groundwater samples were collected and analyzed for TPH, metals, pesticides, PCBs, VOCs, SVOCs, and PAHs. (DEQ, 2010).

Mercury and arsenic were detected at low concentrations in subsurface soils. In groundwater, arsenic, chromium, lead, and pyrene were detected at concentrations exceeding JSCS SLVs; DEQ noted that the concentrations of these constituents may have been elevated because they were derived from a push-probe grab groundwater sample where suspended solids may have been present and may have contributed to the elevated concentrations.

Based on the subsurface soil and groundwater results, DEQ concluded that groundwater beneath Tract O is not a current source of contamination to the river via the preferential pathway of groundwater infiltration into the City's conveyance (DEQ, 2010).

References

DEQ. 2010. Re: No Further Action for Port of Portland Tract O Property, N Ramsey Road, Rivergate Area, Portland, ECSI File #5307. Letter to R. Vincent (Port) from B. Gilles (DEQ). July 16, 2010.



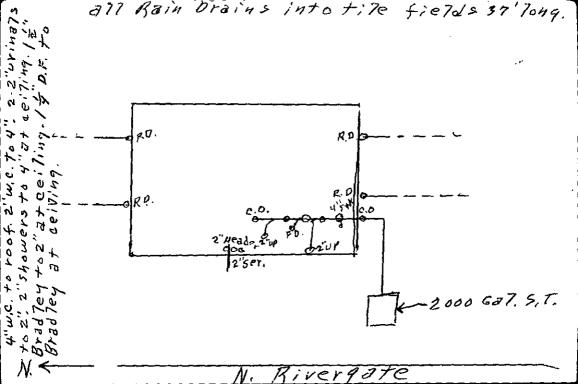
Plumbing Records for

Consolidated Metco - Rivergate

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		Date	<u>1uly 9, 1964</u>	
Address 13940 N. Riv	ergate	Permit No	File No	
LotBikAdd'n			TR	
Master PlumberWidmer	P1bg	<u> </u>		
Owner_ Freightliner_	Casting Plant			
Stories & Class of Building	-			
Water Closets2	Hot Water Tank	1	_Cesspool	
Bath, Shower2	Fountain_Drk	1	_Septic Tank	
Bath Tub	Air Conditioner		_Dry Well	
Basins	Urinals	2	_Water Service	
Auto. Dishwasher	Sink, Bar		_Connect to Sewer	
Sink, OKKANY Wash 1	Sink, Service		_Cesspool, Septic Tani	k1
Disposal				
Refrigerators	Auto. Clothes Washe	r	_Dental Chairs	
Drain Floor1	Catch Basins		_Drain Area	
Development Tank	Rain Drains4		_Other Fixtures_Br.	<u>Fld.</u>
Remarks				
Date of First-Inspection 6-19	2-64Dat	te of Final Ins	spection 7 - 27-	64
Date of First Inspection 6-19 Inspector	anew Insp	pector_ 	ch barre	20-
PHAT	-	0		



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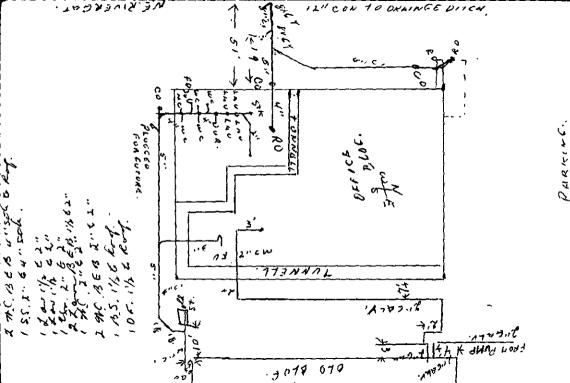
		Date	August 2	21, 1964
Address 13940 N. Rive				lo
LotBikAdd'n			T	R
Master Plumber <u>Widmer P</u> Owner <u>Freightliner</u>	lumbing & Hoat Cast Plant	ing-Co		
Stories & Class of Building	New bldg		·	
Water Closets	Hot Water Tank		Cesspool	
Bath, Shower	Fountain		Septic Tank	1
Bath Tub	Air Conditioner		Dry Well	
Basins	Urinals		Water Service	
Auto. Dishwasher	Sink, Bar		Connect to Sev	wer
Sink, Ordinary	Sink, Service		Cesspool, Sept	ic Tank
Disposal	Sewer Ejectors		Laundry Tray_	
Refrigerators	Auto. Clothes Washer_		Dental Chairs_	
Drain Floor	Catch Basins		Drain Area	
Development Tank	Rain Drains		Other Fixtures	
Remarks				
Date of First Inspection	7-69 Date	of Final Insp	ection	
Inspector Stellin	inspe	ctor		

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MULTNOMAH COUNTY DIVISION OF PUBLIC HEALTH

4793

		Date	Nov. 29, 1965
Address 13940 N River	gate	Permit N	lo File No
LotBlkAdd'n_			R
Master Plumber Widmer	Plbg.		
Owner Con Metco	Inc.		
Stories & Class of Building			
Water Closets	_Hot Water Tank	1	Cesspool
Bath, Shower	Fountain	1	Septic Tank
Bath Tub	Air Conditioner		Ory Well
Basins4	_Urinals	1	Water Service
Auto. Dishwasher	Sink, Bar	11	Connect to Sewer
Sink, Ordinary	Sink, Service	1	Cesspool, Septic Tank
Disposal	Sewer Ejectors		Laundry Tray
Refrigerators	_Auto. Clothes Was	sher	Dental Chairs
Drain Floor2	Catch Basins		Drain Area
Development Tank	Rain Drains	2	Other Fixtures
Remarks		·· <u> </u>	
Date of First Inspection	2-65	Date of Final II	nspection $8 - 4 - 6 7$
Inspector# and	W Boch.	Inspector	Earold N. Bock.

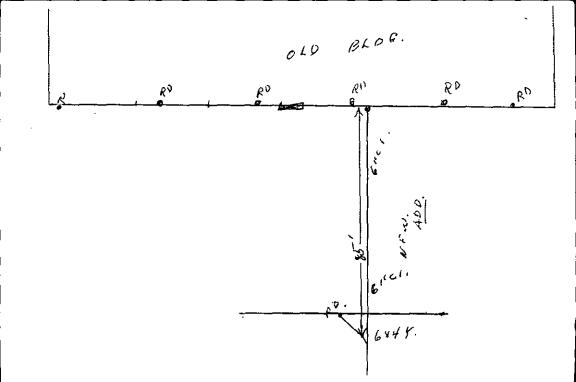




REPORT OF PLUMBING INSPECTION

		Date <u>10/3/66</u>
Address13940	N Rivergate Blvd	Permit NoFile No
LotBik	Add'n	TR
Master Plumber	Dean Warren	
Owner	_Consolidated_Metals_	Co
	ilding	
Water Closets	Hot Water Tank	Cesspool
Bath, Shower	Fountain	Septic Tank
Bath Tub	Air Conditioner	Dry Well
Basins	Urinals	Water Service
Auto. Dishwasher	Sink, Bar	Connect to Sewer
Sink, Ordinary	Sink, Service	Cesspool, Septic Tank
Disposal	Sewer Ejectors	Laundry Tray
Refrigerators	Auto. Clothes Washe	erDental Chairs
Drain Floor	Catch Basins	Drain Area
Development Tank	Rain Drains	Other Fixtures
Remarks		~
Date of First Inspectio	on 4-24-66 Da	ite of Final Inspection
Inspector		spector_ Daveld S. Bork.

PHA 1



REPORT OF PLUMBING INSPECTION

7828

		Date March 7, 1967
Address 13940 N Riv	ergate Blvd.	_Permit NoFile No
LotBlkAdd'n_		
Master Plumber Dean Wa	rren Plbg	
Owner Consolidat	ed Metals	
Stories & Class of Building	01d	comm1.
Water Closets	Hot Water Tank	Cesspool
Bath, Shower	Fountain	Septic Tank
		Dry Well
Basins1	Urinals	Water Service
Auto. Dishwasher	Sink, Bar	Connect to Sewer
Sink, Ordinary	Sink, Service	Cesspool, Septic Tank
Disposal	Sewer Ejectors	Laundry Tray
Refrigerators	Auto. Clothes Washer_	Dental Chairs
Drain Floor	Catch Basins	Drain Area
Development Tank	Rain Drains	Other Fixtures
Remarks		
Date of First Inspection 3-	2-67 Date	of Final Inspection 8-4-67.
Inspector	1. 1Jork. Insp	ector Harold 1/ Barle.

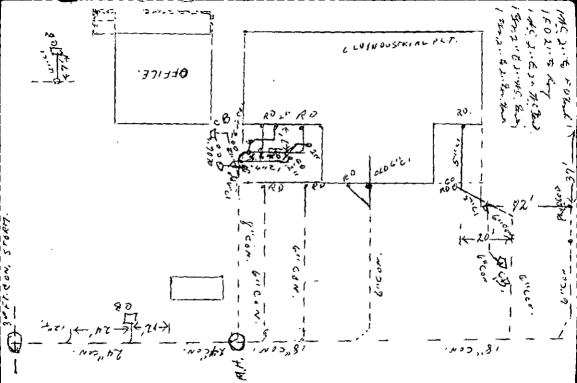
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MULTNOMAH COUNTY DIVISION OF PUBLIC HEALTH 10262 REPORT OF PLUMBING INSPECTION						
	Date	March_20, 1968				
Address13940 N. R	ivergate Blvd. Permit No	File No				
LotBlkAdd'n		R				
Master Plumber Dean War	rren Plumbing					
OwnerConsolida	ted Metals					
Stories & Class of Building	new - 1 story - fa	ictory				
Water Closets 2	_Hot Water Tank1	_Cesspool				
Bath, Shower	Fountain BRADLEY WASH	_Septic Tank				
		_Dry Well				
Basins	Urinals2	_Water Service				
Auto. Dishwasher	_Sink, Bar	_Connect to Sewer				
Sink, Ordinary	_Sink, Service	_Cesspool, Septic Tank				
		Laundry Tray				
Refrigerators	Auto. Clothes Washer	Dental Chairs				
Drain Floor	_Catch Basinsyard3	_Drain Area				
		_Other Fixtures				
Remarks						
Date of First Inspection 7-12	Date of Final Ins	spection 10-4-68				
Inspector_ tarola A.		Aberola 71. Bonh.				

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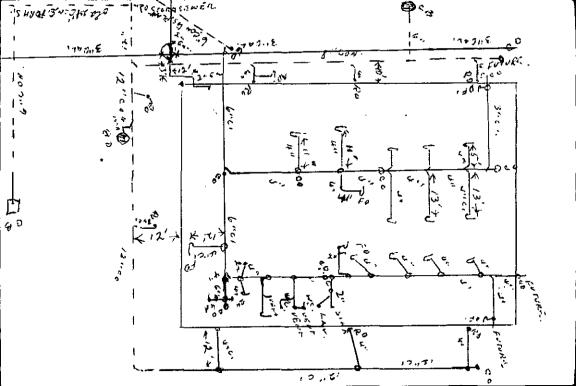


MULTNOMAH COUNTY, OREGON department of medical services - public health division 11795 report of plumbing inspection						
		Date	Nov. 6, 1968			
Address 13940 N Rive:	rgate Blvd.	Permit	NoFile No			
LotBlkAdd'n			TR			
Master Plumber Nat1.	Ind. Corp.			·		
Owner Consolid:	ated Metco Inc.					
Stories & Class of Building	New, one story	, fact	ory			
Water Closets 4	Hot Water Tank	1	Cesspool			
Bath, Shower	Fountain 3		Septic Tank			
Bath Tub	Air Conditioner		Dry Well			
Basins	Urinals1		Water Service			
Auto. Dishwasher	Sink, Bar		Connect to Sewer1			
Sink, Ordinary3	Sink, Service	1	Cesspool, Septic Tank			
Disposal	Sewer Ejectors		Laundry Tray			
Refrigerators	Auto. Clothes Washer		Dental Chairs			
Drain Floor14	Catch Basins	3	Drain Area			
Development Tank	Rain Drains6		Other Fixtures			
Remarks						
			Inspection Harold U. Bor	ler.		
Inspector Aarola	7. Bork. Insp	ector	7-2-69			

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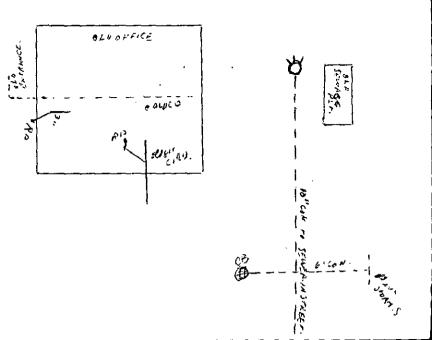
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MULTNOMAH COUNTY, OREGON DEPARTMENT OF MEDICAL SERVICES - PUBLIC HEALTH DIVISION 1252 REPORT OF PLUMBING INSPECTION					
		Date	April 7, 1969		
Address 13940 N River	gate	Permi	t NoFile No		
LotBlkAdd'n			TR_		
Master Plumber Lord Bros	. Cont.				
Owner Consolidated	Metco Inc.				
Stories & Class of BuildingAd	dn to_office				
Water Closets	_Hot Water Tank		Cesspool		
Bath, Shower	_Fountain		Septic Tank		
Bath Tub	_Air Conditioner		Dry Weil		
Basins	Urinals		Water Service		
Auto. Dishwasher	Sink, Bar		Connect to Sewer	1	
Sink, Ordinary	_Sink, Service		Cesspool,Septic Tank_		
Disposal	_Sewer Ejectors		Laundry Tray		
Refrigerators	_Auto. Clothes Washer	r	Dental Chairs		
Drain Floor	_Catch Basins/		Drain Area		
Development Tank	_Rain Drains1_		Other Fixtures		
Remarks					
Date of First Inspection $4-8$	- 69Date	e of Final	I Inspection 7-2-6	9	
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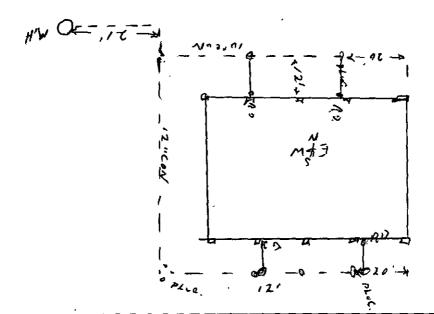
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REPORT OF PLUMBING INSPECTION

		Date_	June 4,	1970
Address <u>13940 N R</u>	ivergate Blvd.			
	dd'n			
Master PlumberDe	an Warren Plbg.			
OwnerCo	nsolidated Metals (<u>lo.</u>		
Water Closets	Hot Water Tank		Cesspo	ol
Bath, Shower	Fountain		Septic	Tank
Bath Tub	Air Conditioner		Dry We	ell
Basins	Urinals		Water	Service
Auto. Dishwasher	Sink, Bar	·	Connec	t to Sewer
Sink, Ordinary	Sink, Service		Cesspo	ol, Septic Tank
Disposal	Sewer Ejectors		Laundr	y Tray
Refrigerators	Auto. Clothes Washer		Dental	Chairs
Drain Floor	Catch Basins	1_	Drain A	\rea
Development Tank	Rain Drains4		Other F	ixtures
Remarks				
Date of First Inspection	6-4-70 Date	of Fin	al Inspection_	9-18-70
Inspector			j	

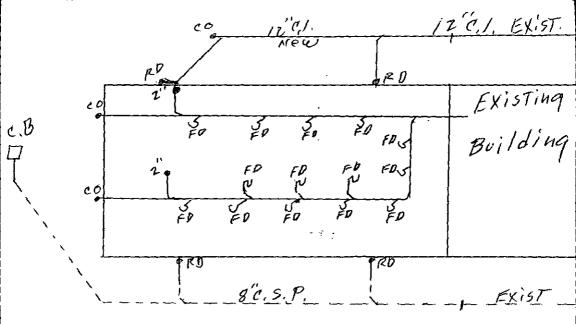
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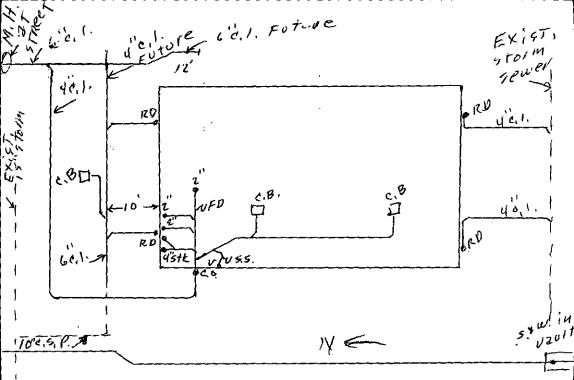
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		Date_October 22, 1971
Address_ 13940 N R:	lwergate Bld.	Permit NoFile No
LotBlk	Add'n	R
Master Plumber Dear	Warren Plbg.	
Owner Con	isolidated Metals Co).
Stories & Class of Buildin	g New addn.	
Water Closets	Hot Water Tank	Cesspool
Bath, Shower	Fountain1	Septic Tank
		Dry Well
Basins	Urinals	Water Service
Auto. Dishwasher	Sink, Bar	Connect to Sewer
Sink, Ordinary	Sink, Service	Cesspool, Septic Tank
Disposal	Sewer Ejectors	Laundry Tray
Refrigerators	Auto. Clothes Washer	Dental Chairs
Drain Floor14	Catch Basins	Drain Area
		Other Fixtures
Remarks		
Date of First Inspection	0-20-21 Date	of Final Inspection 4-75 5-7-3
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MULTNOMAH COUNTY DIVISION OF PUBLIC HEALTH 1955						
Address13940 NRiverga	te Blvd.		i1 7, 1972 File No.	<u>/</u>		
LotBlkAdd'n Master PlumberDean Warr OwnerConsolida				R		
Stories & Class of Building New	, one story, s	hop				
Water Closets 2	Hot Water Tank	1	Cesspool			
Bath, Shower	Fountain 1		Septic Tank			
Bath Tub						
Basins1						
Auto. Dishwasher				-		
Sink, Ordinary	Sink, Service		Cesspool, Septic Ta	ank		
Disposal						
Refrigerators						
Drain Floor	_Catch Basins	3	Drain Area			
Development Tank						
Remarks						
Date of First Inspection 4-17	- 72	e of Final Inst	pection 45 7	5-73		
Inspector Jack 13a		pector d		ita		
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1619 ORTLAND, OREGON Pmt. No. 91664 SANITARYADNE WORKS U OF DEALAN Date 5-2-72 SEWER BRANCH Location 13940 N. Rivergate Blvd. Between 69 ft. north of manhole near SE property line Addition Lot Sec. 26, 2N, 1W T.L. (201) Applicant Waiver No] Yes] # Rowland Plbg. Remarks 6" CSP to northerly stub out of manhole on property. private br. Branch 69 ft. N. of manhol

near SE prop line. Plbg. also conn. 18/2 ft CSP to southerly stub out of manhole and plugged off.

· · · · · · · · · · · · · · · · · · ·				
Inspected 5-5-72	19	By	Brooks	
Book 9 8 Page 14	9	New	X	Repair

N. RAMSEY BLUD. BLYW (20) Sec 26,2 N, 1W, N. RIVERCATE 30 ς. ላ K £. V. PRIVETE 10" LATERAL <u>_</u>1 0 1,200'

REPORT OF PLUMBING INSPECTION

	Date May 3, 1972	
Address_13940 N. Riverga		File No
LotBlkAdd'n		TR
Master Plumber Rowland Plumbing & Heating Co.		
Owner Con Met		
Stories & Class of Building Old, one-story manufacturing plant		
Water Closets		
Bath, Shower	Fountain	Septic Tank
Bath Tub	Air Conditioner	_Dry Well
Basins	Urinals	_Water Service
Auto. Dishwasher	Sink, Bar	_Connect to Sewer1
Sink, Ordinary	Sink, Service	_Cesspool, Septic Tank
Disposal	Sewer Ejectors	Laundry Tray
Refrigerators	Auto. Clothes Washer	Dental Chairs
Drain Floor	Catch Basins	Drain Area
Development Tank	Rain Drains	Other Fixtures
Remarks		
Date of First Inspection	Date of Final Inspection	
Inspector	Inspector	

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CITY OF PORTLAND, OREGON DEPARTMENT OF PUBLIC WORKS BUREAU OF DESIGN SEWER BRANCH

Pmt. No. 9	1	7	12	
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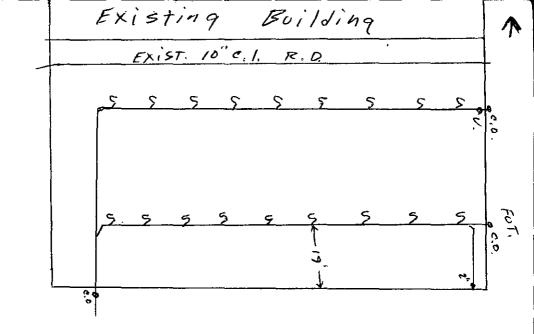
Date 5-5-72

WM Lot T.L. 20Blk
Waiver No 7 Yes 7 #
uilt on existing br behind
anhole to property. 288 ft
anhole east of Rivergate Blvd

Inspected	5-17-72	19	By Brooks		
Book	9 Page	155	New	Repair	

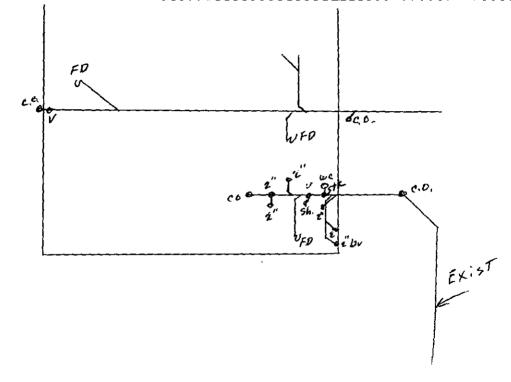
<u>452'</u> 12" c : 385 ~12'csr BLVD. SAMPLING MH. BLVO. IV. RAMSEY N, RIVERCATI Μ ۵) TL. (2.07 Sec. 26, 2N, IW, M 1200

	AH COUNTY DIVISION OF REPORT OF PLUMBING INS Date_	PECTI		21896
Address 13940 N. Riverg	ate Blud. Perr		_	
LotBlkAdd'n				
Master Plumber Dean Warre	n Plumbing Co.			
Owner Consolidated Met	-			
Stories & Class of Building Ne				
Water Closets				
Bath, Shower				
Bath Tub	_Air Conditioner		_Dry Well	
Basins	_Urinals		_Water Service	
Auto. Dishwasher			_Connect to Sewer_	
Sink, Ordinary	_Sink, Service		_Cesspool, Septic Ta	nk
Disposal				
Refrigerators				
Drain Floor18	<i>.</i> .	_	_Drain Area	
Development Tank	-	4		
Remarks				
Date of First Inspection 3-1	3-7 <u>3</u> Date of Fir	nal Ins	pection <u>9-6</u>	-73
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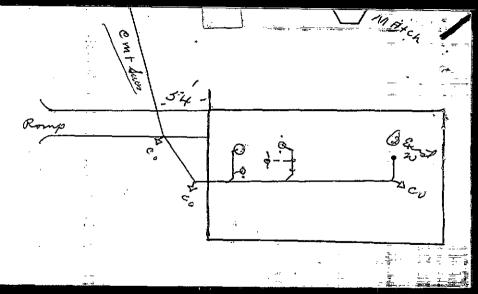


MULT	NOMAH COUNTY DIV	ISION OF	PUBLIC HEALTH	221 62
13940	REPORT OF PLUM		ECTION April 23, 197	
Address 14141 N.	Rivergate	Permi	t NoFile No	·
LotBlkA	dd'n	÷	T	R
Master Plumber	Zinda Co.			
Owner Oreg	. Steel Mills			
Stories & Class of Building	L. •			
Water Closets2	Hot Water Tank_	2	Cesspool	
Bath, Shower1	Fountain	1	Septic Tank	
Bath Tub	Air Conditioner		Dry Well	
Bath Tub Basins 2	Urinals		Water Service	1
Auto. Dishwasher	Sink, Bar	·	Connect to Sewe	r <u> </u>
Sink, Ordinary	Sink, Service	1	Cesspool, Septic	Tank
Disposal	Sewer Ejectors		Laundry Tray	
Refrigerators				
Drain Floor4	Catch Basins		Drain Area	
Development Tank			Other Fixtures	
Remarks				
Date of First Inspection_3	-76-73	Date of Fina	Inspection K-3	0-73
Inspector	erner -	Inspector	Harvett	····
PHAT				

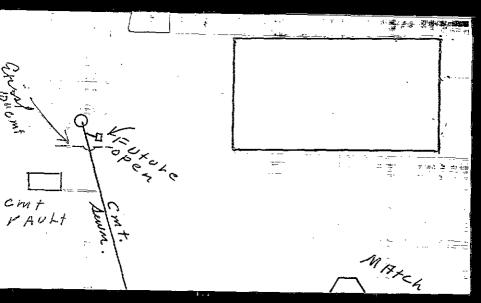
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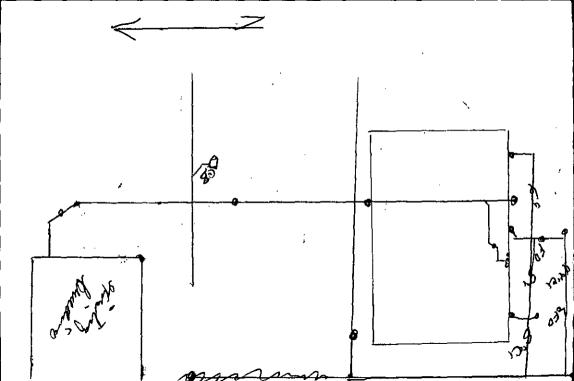
Form W-89+ BUREAU O bings Date ____2/1 ·(4-74) OF PLUN INSPECTION REPORT River Gate Blvd. 13940 Permit_0199 Address_ _____ Add _ Lot Blk_ Con Met Owner. Rowland Plbg 85-2586 Contractor Old 1-Sty Comm Stories and class of building Water Closets ____4N ___Hot-Water Tank ____1M Cesspool _____ Bath. Shower _____ Auto. Cl. Washer _____ Conn. Cesspool _____ Bath Tub ______ Auto. Dishwasher _____ Dry Well _____ _ Basins _____ Drain Floor _____ Conn. Drywell _____ Sinks . __ Drain Area _____ Conn. Sewer _____ Laundry Trays _____ Rain Drains _____ Storm Sewer _____ Bldg, Pmt, _____ Water Ser, ____ ____Catch-Basins _____ Urizals 2N 1M Remarks . Date of First Inspection 6 Date of Final Inspection Inspector Inspector



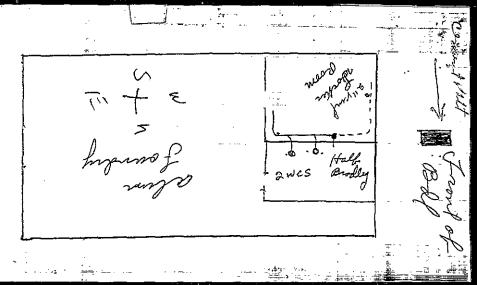
Form W-89, (4-74) Address	REPOR 13940 N.	BUREAU OF I T OF PLUME Rivergat	שאום ועס אוק באו פ אוק באים: פ גע	ss spn 1	Date <u>4/</u> Permit 02	<u>19/76</u> 00549
Lot	Blk Blk	Ađđ				مى مەرىپىدىنى بىلىنى يېرىمى چېنىر چېرىيىنى مەرىپىدىنى بىلىنىچىنى
Contractor		Plumbing	& Heat	ting		
Stories and clas	s of building _	old one.	story	commerc	ial bld	g.
Water Closets _	H	Hot-Water Tank		Cesspool		
Bath, Shower_		Auto. Cl. Washe	r	Conn. Ces	sspool	
Bath Tub		uto. Dishwash	er r	Dry Well		
Basins	I	Drain Floor		Conn. Dry	ywell	··
Sinks	I	Drain Area 🔔		Conn, Sev	wer	
Laundry Trays]	Rain Drains		Storm Sev	wer	••••••••••••••••••••••••••••••••••••••
Bldg, Pmt,						
Remarks _ Sa						<u>1 N.</u>
	<u> </u>	<u> </u>	- 20 -20-20-20-20-20-20-20-20-20-20-20-20-20-	<u> </u>		
Date of First In	spection 2 -	19-76	Date of Fi	nal Inspectio	n <u>871-</u>	76 -
Qr		Inspector				Inspector



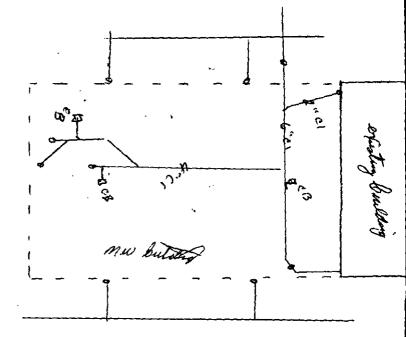
	MULTNOMAH	COUNTY	274	179
DEPARTMENT (OF ENVIRONMENTAL			
	EPORT OF PLUMBI			
ĸ	SPOKE OF FLOREI			
12040 11 04				
Address 13940 N River	gare Blvd.	Permit No	File No.	D
LotBlkAdd'n				
Master Plumber Dean_Warr	en_P1bg,			
OwnerConsolid	ated Metco —			
Stories & Class of Building_New	- OBE STOTY -W	archouse		
Water Closets2	_Hot Water Tank	1	Cesspool	
Bath, Shower				
Bath Tub	_Air Conditioner		_Drv Well	
Basins2	_Urinals		Water Service	
Auto. Dishwasher	_Sink, Bar		_Connect to Sew	er <u>storm 1</u>
Sink, Ordinary	_Sink, Service		_Cesspool, Septid	Tank
Disposal	_Sewer Ejectors		_Laundry Tray	
Refrigerators	_Auto. Clothes Washe	r	Dental Chairs	
Drain Floor	_Catch Basins5		Drain Area	
Development Tank	_Rain Drains 6 _		_Other Fixtures	Manholes /
Pemarks				
Date of First Inspection $8-9^{-1}$	76 Dat	e of Final Ins	pection /-	18-77
Inspector			Merne	84
РНА 1		-	Ture	·•··



rm w-89 (4-74)	REPO 13940 N	BUREAU OF BU RT OF PLUMBIN . Rivergate	Date 8/10/76
			and the second
Gwner			
Stories and class	s of building	old one	-story factory
Water Closets	2N	Hot-Water Tank	Cesspool
Bath, Shower_		Auto, Cl. Washer_	Conn. Cesspool
Bath Tub		Auto, Dishwasher.	Dry Well
Basins	1N .	Drain Floor	Conn. Drywell
			Conn. Sewer
Laundry Trays		Rain Drains	Storm Sewer
			Catch-Basins
Remarks		<u> </u>	
·			
Date of First In	spection	Da	te of Final Inspection 8-11-26
		_ Inspector	Inspector



	MULTNOMAH COUNTY	
DEPARTMENT	OF ENVIRONMENTAL SERVICES	S/PERMIT SECTION
R	EPORT OF PLUMBING INSPECT Date10	rion 1/29/76 28069
Address13940	N. Rivergate Permit No	File No
Master PlumberVengele	n & Vincent Co.	
Owner Consolidated	Metco, Inc.	
Stories & Class of Building		
Water Closets	_Hot Water Tank	_Cesspool
Bath, Shower	_Fountain	_Septic Tank
Bath Tub	_Air Conditioner	Dry Well
Basins	_Urinals	_Water Service
		Connect to Sewer
Sink, Ordinary	_Sink, Service	_Cesspool, Septic Tank
Disposal	_Sewer Ejectors	Laundry Tray
Refrigerators	_Auto. Clothes Washer	_Dental Chairs
Drain Floor	_Catch Basins (garage) 4	_Drain Area
	Rain Drains 6	
Remarks		2 future openings
Date of First Inspection	7-76Date of Final Ins	pection_1-18-77
Inspector	utInspector	Harnelt
PHA 1	· -	



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	MULTMOMAH COUNTY, OREGON NVIRONMENTAL SERVICES DIVIS REPORT OF PLUMBING INSPECTIO Date1	ION 3N 14/77 28432
Address 13940 N. R	ivergate Blvd Permit No	File No
		T
Master Plumber Widmer	Plbg. & Heating	
Owner Consol	idated Metco, Inc.	
Stories & Class of Building		
Water Closets	Hot Water Tank	_Cesspool
Bath, Shower	_Fountain3	_Septic Tank
Bath Tub	_Air Conditioner	_Dry Well
Basins	Urinals	_Water Service
Auto. Dishwasher	Sink, Bar	_Connect to Sewer4
Sink, Ordinary	Sink, Service	_Cesspool, Septic Tank
Disposal	Sewer Ejectors	_Laundry Tray
Refrigerators	Auto. Clothes Washer	_Dental Chairs
Drain Floor	_Catch Basins (yard) 2	_Drain Area
Development Tank	Rain Drains	_Other Fixtures
Remarks	catch basins, gara	qe4
Date of First Inspection Prov	catch basins, gara	spection 5-19-77
Inspector	Inspector	Samet
PHAI #2	56	

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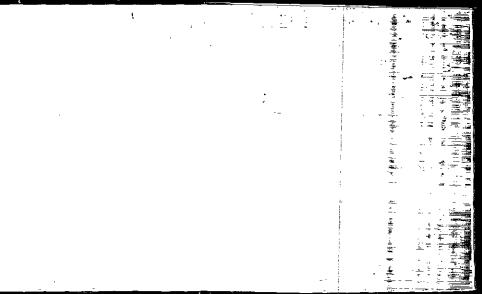
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	MULTNOMAH COUNTY				
DEPARTMENT OF ENVIRONMENTAL SERVICES/PERMIT SECTION					
REQUEST	FOR INSPECTION OF PLUM	SING			
		25-77 3047()			
1 D .	Date_ 10-	-25-77 ····			
Address13940 Niniverg	jatePermit No	File No			
LotBikAdd'n		TR			
Master Plumber Widmer 1	<u>lbg</u>				
OwnerConsolidat	ted Metco, Inc				
Stories & Class of Building					
Water Closets5	_Hot Water Tank	_Cesspool			
Bath, Shower	_Fountain1	_Septic Tank			
Bath Tub	_Air Conditioner	_Dry Well			
Basins5	_Urinals 1	_Dry Well _Water Service			
		_Connect to Sewer			
Sink, Ordinary2	_Sink, Servicel	_Cesspool, Septic Tank			
Disposal	_Sewer Ejectors	_Laundry Tray			
Refrigerators	_Auto. Clothes Washer	_Dental Chairs			
	_Catch Basins				
Development Tank	_Rain Drains2	_Other Fixtures			
Remarks		openings 4			
Date of First-Inspection 8-24-	77Date of Final Rs	pection 3-13-28			
Inspector Jan Car	inspector A	& Danet			
PHA 2					

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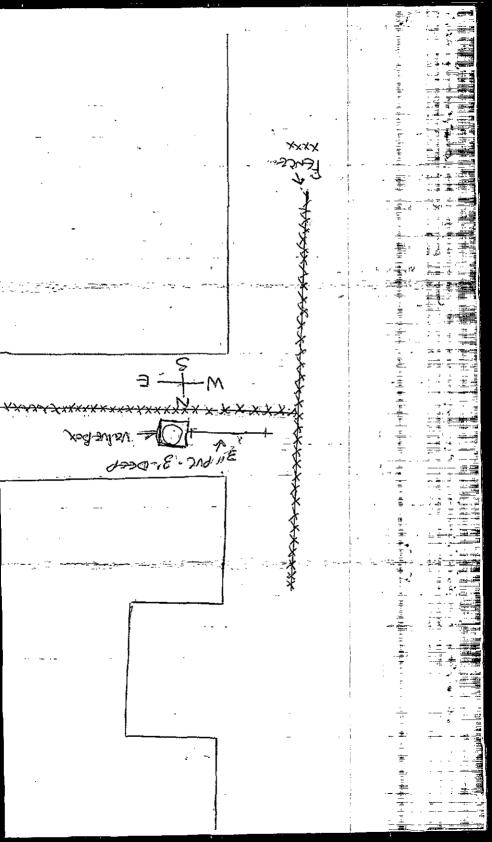
REPORT OF P	EAU OF BUILDINGS LUMBING INSPECTION ergate Blvd. ed Metco	
	<u>ouchley Plumbing</u>	
Water Closets	_ Hot Water Tank	Conn. Cesspool Seepage Trench _ Dry Wells
Basins	_ Service Sinks	Conn. Sewer
		Sewer Cap Catch Basin Heat Exchanger
Water Service	_ Rain Drains	_ Solar Panel
Date of Cover Inspection	Date of Final	Inspection 2-18-88 Miller Inspector

d



		Date 3/14/90
🚌 🚽 🏅 📖 🚛 🛅 🔣 RE	PORT OF PLUMBING INSPECT	101169
Address		Permit
• Owner	DeTemple Co.	
	of Building	_
		Conn. Cesspool
, j		Seepage Trench
		Dry Wells
		Conn. Sewer
		Conn. Storm
		Sewer Cap
		Catch Basin
Heat Pump	Area Drain	Heat Exchanger Solar Panel
water Service	•	Solar Panel
Remarks		e of Final Jospection / 3-18-90
Date of Cover Inspe		
	Inspector	
DATE	l	REMARKS
	<u> -</u>	
3-16-90	Witzo Scoules	Papoir line Dort
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PLUMBING INSPECTION REQUEST FORM

BLVD

: 13940 N RIVERGATE

Address

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Plbg Permit No	: PLM98-00513	Status	: P
Date Issued Date Updated Permittee Permittee Phone	: 12-MAR-98 : LOY CLARK PIPE	LINE CO	: BRA
Customer	: CONMET	ENTE	915111
Description	: 2 fxt		
Notes	:		
Work Location	:		
Building Use Building Work Building Owner	: REP	Sewer Connec	st: N
3-24-98	INSPECTION Rought find		ll)
Final Inspection	(O lot #	Date: 3-24-98

PERMITTED WORK:						
Number of Fixtures: Number of Branches: Solar Units : In-Kind Water Htr : Number of Floors :	0 Sanitar 0 Storm S	Service - Feet: cy Sewer - Feet: Sewer - Feet: cains - Feet:	0 0 0 0			
FIXTURES:						
Urinals : Wash Basins : Bathtubs : Showers : Bidets : Water Heaters : Clothes Washers: : Laundry Trays : Serv/Mop Sinks : Floor Drains :	Dishwashers : Garb. Disposal: Drink Fountain: 2-Comp Sinks : 3-Comp Sinks : Hand Sinks : Floor Sinks : Bar Sinks :	Catch Basins Drywells Soak Trench Interceptor Sewer Caps Conn. Sewer Conn. Storm Rain Drains Bck Wtr Valve				
Remarks :			·			

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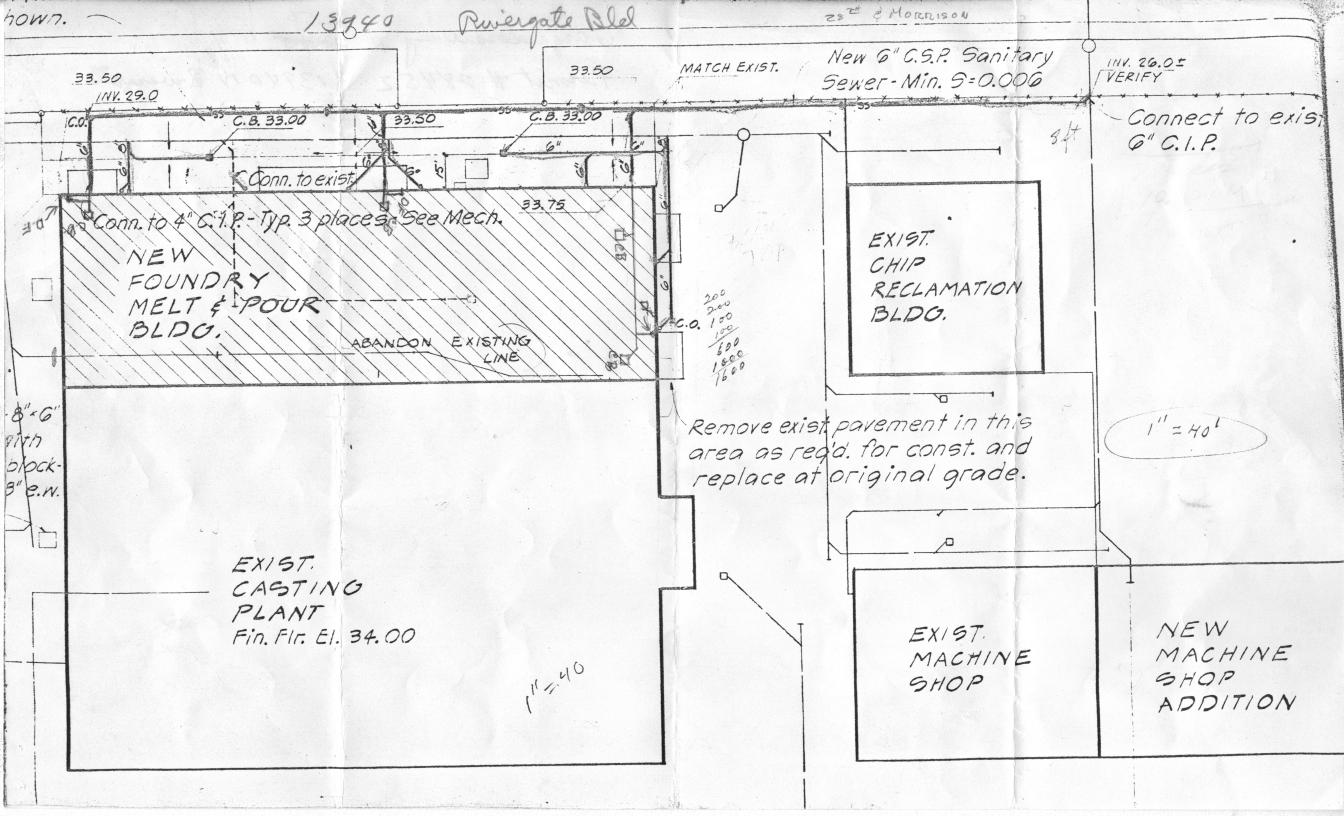
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PLUMBING INSPECTION REQUES	T FORM	Report: PLMINSP.REP
Address : 13940 N RIVERGATE	BLVD	PERMITTED WORK:
Plbg Permit No : PLM98-02280 Status	: I	
Date Issued : 20-OCT-98 ())Issued B Date Updated : 20-OCT-98 ()Updated B Permittee : CROUCHLEY PLUMBING CO IN Permittee Phone: 503 286-4431	BY CLG SYIT : GLG	Number of Fixtures:0Water Service - Feet:180Number of Branches:0Sanitary Sewer - Feet:180Solar Units:0Storm Sewer - Feet:0In-Kind Water Htr:0Rain Drains - Feet:0
Customer : CON MET INC		FIXTURES:
Description : SEWER/WATER LINE		Water Closets : Kitchen Sinks : Area Drains : Urinals : Dishwashers : Catch Basins : Wash Basins : Garb. Disposal: Drywells : Bathtubs : Drink Fountain: Soak Trench : Showers : 2-Comp Sinks : Interceptor
Notes :		Bidets :
Work Location:	<u>.</u>	Serv/Mop Sinks : Hub Drains : Bck Wtr Valve: Floor Drains : Backflow Prvtr: Reversal : : : :
Building Use : COM Sewer Con Building Work : REP Building Owner : METCO INC	inect: N	Remarks - :
Building Owner : METCO INC <u>INSPECTION:HISTORY:</u> 10-23.98 Duckfiel require pipe installed in the De MAGA	Under all tch. 2 & 4 9 11	Torondo Studo 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

	PLUMBING INSPECTION REQUEST FORM	· · ·	Report: PLMINSP.REP
Address	: 13940 N RIVERGATE BLVD	· · ·	PERMITTED WORK:
Plbg Permit No	: PLM98-02739 Status : P		
Date Updated	: 17-DEC-98 Issued By : SLC : 17-DEC-98 Updated By : SLC : CROUCHLEY PLUMBING CO INC	Number of Fixtures: Number of Branches: Solar Units : In-Kind Water Htr :	0 Sanitary Sewer - Feet: 0 0 Storm Sewer - Feet: 0 0 Rain Drains - Feet: 300
Customer		د.	FIXTURES:
	: run 300ft of rain drains	Urinals : Wash Basins : Bathtubs :	Kitchen Sinks : Area Drains : Dishwashers : Catch Basins : Garb. Disposal: Drywells : Drink Fountain: Soak Trench : 2-Comp Sinks : Interceptor :
Notes	-	Bidets : Water Heaters : Clothes Washers: Laundry Trays :	_ 3-Comp Sinks : Sewer Caps : _ Hand Sinks : Conn. Sewer : _ Floor Sinks : Conn. Storm :
Work Location	·	Serv/Mop-Sinks :	
Building Use Building Work Building Owner	: ADD	_Remarks :	
	INSPECTION#HESTORY:	1	Ì,
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Final Inspectio			

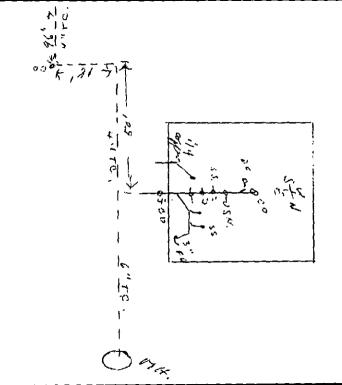


Plumbing Records for

Oregon Steel Mills

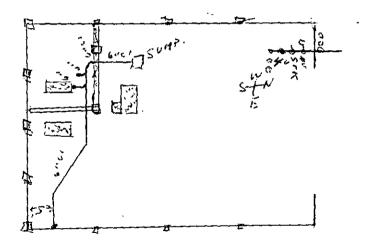
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MULTNOMAH COUNTY DIVISION OF PUBLIC HEALTH					
REPORT OF PLUMBING INSPECTION 10183					
Address14141_N。	Rivercate Blvd.			1968	
LotBlkAd					
Master PlumberC	.				
OwnerOre	gon_Steel_Mills				
Stories & Class of Building_	new - 1 story	<u>- office</u>	e bldg.		
Water Closets 2	Hot Water Tank	1	_Cesspool		
Bath, Shower1	Fountain_ DF	1	_Septic Tank		
Bath Tub	Air Conditioner		_Dry Well		
Basins2	Urinals	1	_Water Service		
Auto. Dishwasher	Sink, Bar		_Connect to Ser	wer1	
Sink, Ordinary	Sink, Service	2	_Cesspool, Sept	ic Tank	
Disposal	Sewer Ejectors		_Laundry Tray_		
Refrigerators	Auto. Clothes Wash	er	_Dental Chairs_		
Drain Floor2			_Drain Area		
Development Tank	Rain Drains	_2	_Other Fixtures		
Remarks					
Date of First Inspection 12-5-69 Date of Final Inspection 12-5-69					
InspectorFas	dot. park in	spector	Hinda	A.Bork	
				·	



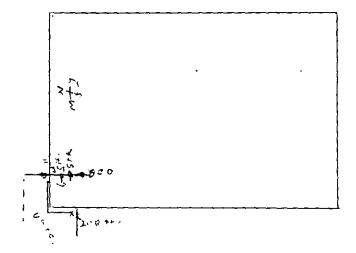
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MULTNOMAH COUNTY, OREGON DEPARTMENT OF MEDICAL SERVICES - PUBLIC HEALTH DIVISION 11351 REPORT OF PLUMBING INSPECTION Date_____Aug 22, 1968_____ Address 14141 N Rivergate Permit No._____ File No._____ Master Plumber Watson Plbg Co Owner Oregon Steel Stories & Class of Building Water Closets _____ Hot Water Tank _____ Cesspool _____ Bath, Shower_____Fountain_____Septic Tank______ Bath Tub Basins______Urinals______Water Service_____ Auto. Dishwasher ______Sink, Bar_____Connect to Sewer_____ Sink, Ordinary_____Sink, Service_____Cesspool, Septic Tank_____ Disposal______Sewer Ejectors_____Laundry Tray_____ Refrigerators _ _ _ _ _ _ _ _ _ _ _ Auto. Clothes Washer______Dental Chairs _ _ Drain Floor_____Catch Basins_____Drain Area___3 Development Tank______Rain Drains_____Other Fixtures_____ Remarks Date of First Inspection 6-27-68 ____ Date of Final Inspection 12-5-67 tala Aml Inspector Inspector



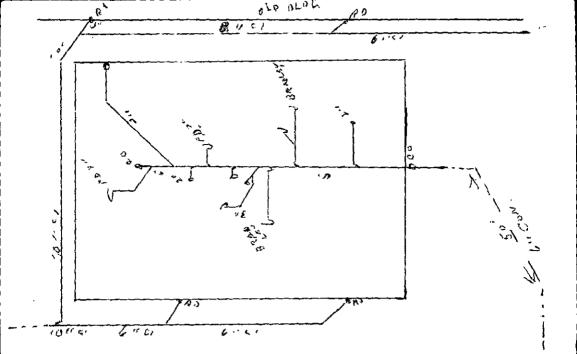
DEPARTMENT O	IULTNOMAH COUN F medical services EPORT OF PLUMBING	- PUBLIC HE	ALTH DIVISION	12121
Address14141 N River	gate	Permit No	File No	
LotBlkAdd'n				
Master Plumber C. Watson	Plbg			
Owner Surface C	ombustion			
Stories & Class of BuildingN	ew, three-four	story, si	eel mill	
Water Closets	_Hot Water Tank1		Cesspool	
Bath, ShowerI	_Fountain <u>1</u>	S	eptic Tank	
Bath Tub	Air Conditioner	C	Dry Weil	
Basins1	_Urinals	1V	Vater Service	
Auto, Dishwasher	_Sink, Bar	(Connect to Sewer_	
Sink, Ordinary	_Sink, Service		esspool, Septic Ta	nk
Disposal	_Sewer Ejectors	L	aundry Tray	
Refrigerators	_Auto. Clothes Washer,		Dental Chairs	
Drain Floor	_Catch Basins	C	rain Area	
Development Tank	_Rain Drains	3(Other Fixtures	
Remarks	SEE PERMIT	10183 F	OKSEWER.	
Date of First Inspection_ 12-2	2-68Date	of Final Inspe	ection 12-5-	69
InspectorAmole	T. Bork insp			

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12601 MULTNOMAH COUNTY, OREGON HEALTH DIVISION DEPARTMENT REPORT OF PLUMBING INSPECTION Date 4-16-1969 Address Rivergate Industrial Area ____Permit No______ File No.______ . . T R tot Bik Add'n Master Plumber Lord Bros. Cont. Inc. Owner Oregon Steel Mills Stories & Class of Building_ 1 Melt shop office Water Closets 2 _____Hot Water Tank __ Cessbool Bath, Shower 5_____Fountain____3 Septic Tank_____ Bath Tub Basins 1 Urinals 2 Water Service 1 Auto. Dishwasher______Sink, IBRADLEY. Connect to Sewer_____ (1) Cesspool, Septic Tank____ Sink, Ordinary_____Sink, Service_____ Disposal ______ Sewer Ejectors ______ Laundry Tray Refrigerators ______ Auto. Clothes Washer _____ Dental Chairs ______ Drain Floor______Drain Area______Drain Area______ Development Tank_______ Rain Drains______Other Fixtures Lab. sink- 1 Remarks SEELLARGE DRAWING NON 96 STEE LEFTER ATTACHED FOR RAINDRAIN. Date of First Inspection 4-23-69 Date of Final Inspection 10-24-66 Soll inspector thank Inspector Travald

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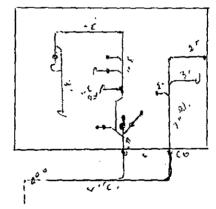
MULTNOMAH COUNTY, OREGON 12776 PUBLIC HEALTH DIVISION DEPARTMENT OF MEDICAL SERVICES . REPORT OF PLUMBING INSPECTION Date May 12, 1969 Address 14141 N Rivergate _____Permit No._____File No._____ Lot _____ Blk ____ Add'n______ T_____ R_____ Master Plumber Oregon City Plbg. Owner Midland-Ross Stories & Class of Building _____ New, one story, shop _____ Water Closets _____ Hot Water Tank _____ Cesspool ______ Bath, Shower._____Fountain_____Septic Tank_____ Bath Tub_____Air Conditioner____Dry Well_____ Basins 1 Urinals 2 Water Service Auto. Dishwasher_____Sink, Bar_____Connect to Sewer_____ Sink, Ordinary 2 Sink, Service Cesspool, Septic Tank ____ Disposal______Sewer Ejectors______Laundry Tray_____ Auto. Clothes Washer_____Dental Chairs_____ Refrigerators 2 ____Catch Basins_____Drain Area_____ Drain Floor Development Tank______Rain Drains _____3 _ Other Fixtures_____ Remarks _____ SEFPERATE 13695 FOR SELVER PERMIT. Inspector_ Harold . Brik. inspector____

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G. Tr.



DEPARTMENT C	IULTNOMAH COUNTY, OR F Medical Services - Publ Report of Plumbing Inspe	IC HEALTH DIVISIO	∾ 13695
		<u>September 2</u>	<u> </u>
Address 14141 N. Hive	ergatePermit	t NoFile No	D
LotBlkAdd'n		ĭ	R
Master Plumber Watson PI	Lumbing Co.		
Owner Surface Comb	·		
Stories & Class of Building	· • · · · · · · · · · · · · · · · · · ·		
Water Closets	_Hot Water Tank	Cesspool	
Bath, Shower	_Fountain	Septic Tank	
Bath Tub	_Air Conditioner	Dry Well	
Basins	Urinals	Water Service	
Auto. Dishwasher	_Sink, Bar	Connect to Sew	er <u> </u>
Sink, Ordinary	Sink, Service	Cesspool, Septic	Tank
Disposal	_Sewer Ejectors	Laundry Tray	
Refrigerators	_Auto. Clothes Washer	Dental Chairs	
Drain Floor	_Catch Basins	Drain Area	
Development Tank	_Rain Drains	Other Fixtures_	
Remarks	SEE PERMIT 12770	E FORDEHWI	~F
Date of First Inspection	Date of Final	Inspection 8	-25-69
Inspector	Inspector	Harold	Bork.
PHAI		RECTEBY L.FER	

DEPARTMENT C	MULTNOMAH COUL	S - PUBLIC	HEALTH DIVISION	14485
	REPORT OF PLUMBIN	IG INSPECT	ION	
		Date	12-4-69	<u> </u>
Address14141 N. Riv	ergate	Permit N	oFile No.	
LotBlkAdd'n			T	R
Master PlumberC. Wats				
Owner Midland Ros				
Stories & Class of Building	*			
Water Closets				
Bath, Shower				
Bath Tub	_Air Conditioner	<u></u>	Dry Well	
Basins				
Auto. Dishwasher	Sink, Bar		_Connect to Sewe	r
Sink, Ordinary			Cesspool, Septic	Tank
Disposal				
Refrigerators				
Drain Floor				
Development Tank Remarks	ter on FILE	FOR RA	IN PRAINS.	
Date of First Inspection	Dat	e of Final In	spection 12-4	5-69
Inspector				

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/5/9-/ Form w 27 (4-69)			KS	Pmt. Date			<u>584</u> 29,	1970				
Location		14400	N.R	iverg	ate l	Blvd.						
Between				a								
Addition					Fax	Lot 2	2	Sec	26	~ 2	N 1	ជា
Applicant	Lor	d Bro	s. Con			iver N			s □ ‡		<u> </u>	. VY .
Remarks	12''	CSP	to Ma:	ints.	Тар	in M	н				0 F1	
from	top	of man								<u> </u>	<u> </u>	
-												
Inspected	7/2	8/69	19	By	Br	ooks						
Book	9	Page	149	N	lew,	-		Repa	ir			

	MULTNOMAH COUN of medical services Report of Plumbing	- PUBLIC H	EALTH DIVISION	14662
		Date	1/14/70	
Address 14141 N. Ri	vergate	Permit No.	File No	
LotBlkAdd'n_			T	_R
Master Plumber Lord Bros	. Cont., Inc.			
Owner Oregon Stee				
Stories & Class of Building	New 1-story	office		
Water Closets 2				
Bath, Shower5				
Bath Tub				
Basins			Water Service	
Auto. Dishwasher	Sink, Bax 1 Bradle	ev	Connect to Sewer_	_1
Sink, Ordinary			Cesspool, Septic Ta	ink
Disposal				
Refrigerators				
Drain Floor				
Development Tank	Rain Drains27_		Other Fixtures_	
Remarks SEE LARGE DRA	WING NO# 96 5	EFLECT C	RATTACHAD	FOR RHADRAN
Date of First Inspection6	-5-69 Date	of Final Inst	pection/0~	24-69
InspectorZangla	A. Boken Inspe	ector4	crole 11:B	ink
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S 1619 FORM W 271-1 (2-68)	CITY OF PORTLAND DEPARTMENT OF PU	•	Pmt. No. 94207 Date 9:13:73
5.	SEWER BRA	NCH	Date 113:13
Location 14400	N. KIVERGAT	E BLVD	
Between			
Addition SEC, 2	6 TZN RIW	Lot TL ((3) Bik.
Applicant VENCEL	EN & VINCENT CO.	Waiver No []Yes 🛛 #
Remarks 8 ¹¹ CS	OP TO HAINT, Y	IN MS. 7	12'D, AT CURB
	H SOF PROP		
	•		
Inspected 9.17.7	19 By B	ROOKS	
Book 9	Page / 9 Nev		Repair

T.Z. 22 SEC. 26, 2.N. 11/W, SAMPLING MH 82VD VM.H.#23 (KIVERGATE SANITARY ONLY SEVER V,

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	H COUNTY DIVISION OF PUB	6. U 1. 6
		ust 30, 1973
Address 14141 North R	vergate Blvd. Permit No.	File No
Master Plumber Temple Plum	bing, Inc.	······
Owner Midrex Division of	of Midland Ross Corp.	
Stories & Class of Building		
Water Closets	_Hot Water Tank	Cesspool
Bath, Shower	_Fountain	Septic Tank
Bath Tub	_Air Conditioner	Dry Well
Basins	Urinals Replace 1	Water Service
Auto. Dishwasher	_Sink, Bar	Connect to Sewer
Sink, Ordinary	_Sink, Service	_Cesspool, Septic Tank
Disposal	_Sewer Ejectors	Laundry Tray
Refrigerators	_Auto. Clothes Washer	Dental Chairs
Drain Floor	_Catch Basins	Drain Area
Development Tank	_Rain Drainsl	Other Fixtures
RemarksPlumbup	& effetire	
Date of First Inspection		pection 12-17-73
Inspector	1Inspector	Gamete

PHA 1

MULTNON	AAH COUNTY DIVISION REPORT OF PLUMBING		23141
	Da	ate <u>Ser</u>	tember 7, 1973
Address 14141 N. Rive		-	File No
LotBlkAdd'n	~		
Master Plumber_ J. B. Le	wis Plumbing & Hea	ating]	nc.
Owner_ Midland_Ross C			
Stories & Class of Building			
Water Closets1	Hot Water Tank	1_`	Cesspool
Bath, Shower	Fountain		_Septic Tank
Bath Tub	Air Conditioner		_Dry Well
Basins1	Urinals	1	_Water Service
Auto. Dishwasher	Sink, Bar	·	_Connect to Sewer
Sink, Ordinary	Sink, Service		_Cesspool, Septic Tank
Disposal	Sewer Ejectors		Laundry Tray
Refrigerators	Auto. Clothes Washer		_Dental Chairs
			_Drain Area
Development Tank	Rain Drains		_Other Fixtures
RemarksPlussel	y on 5 floor to 1	fister	a on first
Date of First Inspection	3-73 Date of	f Final Ins	vection 12-19-73
Inspector		lor	Marsile.

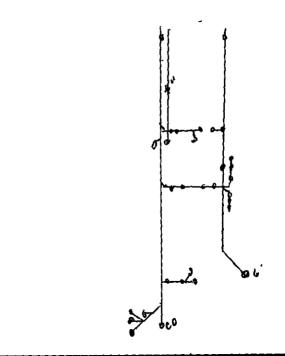
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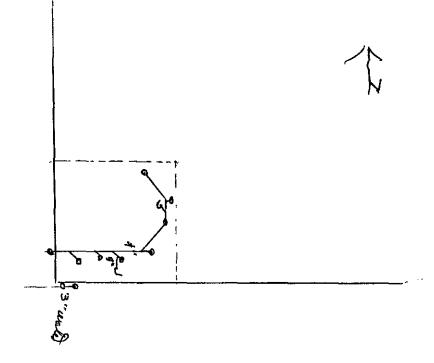
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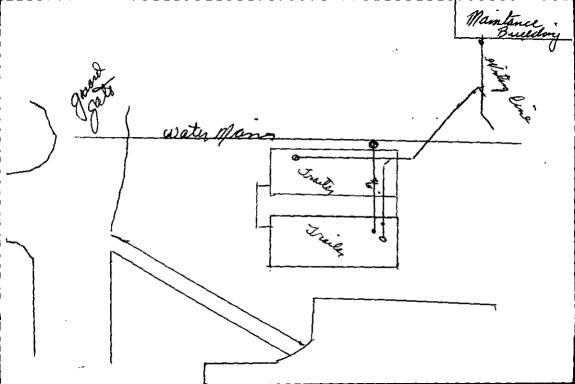
	H COUNTY DIVIS			23195
		Date Sep	t. 14, 1973	
Address 14400 N Riverg	ate	Permit No.	File No	
LotBlkAdd'n			T	_R
Master Plumber Vengelen	& Vincent C	D		
OwnerOregon	Steel Mills			
Stories & Class of BuildingN	<u>lew, one stor</u>	y, office		
Water Closets 9			_Cesspool	
Bath, Shower	Fountain	1	Septic Tank	
Bath Tub	Air Conditioner		Dry Well	
Bath Tub Basins8	_Urinals	3	_Water Service	1
Auto. Dishwasher				
Sink, Ordinary2	_Sink, Service	1	_Cesspool, Septic Ta	ink
Disposal	Sewer Ejectors		Laundry Tray	
Refrigerators	_Auto. Clothes Wasl	ner	_Dental Chairs	
Drain Floor6	_Catch Basins	6	Drain Area	
Development Tank			_Other Fixtures	
Remarks Working Ch				
Date of First Inspection 9-1	13-73 C	ate of Final Ins	pection 6-14	-74
Inspector			Gamer	



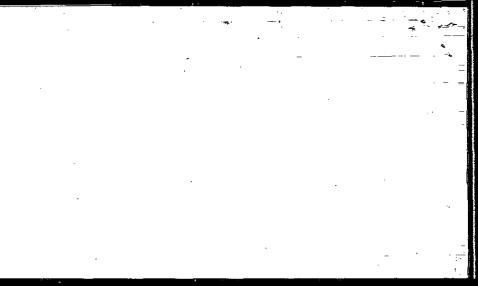
	AH COUNTY DIVISION REPORT OF PLUMBING			23410
	ſ	t_{ate} Oct	<u>ober 31, 1</u>	.973
Address 14400 N. Rive				
LotBikAdd'n				
Master Plumber Harder Me	ech. Contrs.			
Owner Oregon Steel				
Stories & Class of Building	ew, one-story	mainte	enance bui	lding
Water Closets4	Hot Water Tank	2	_Cesspool_	
Bath, Shower2	Fountain	2	Septic Tank	
Bath Tub	Air Conditioner		_Dry Well	
Basins2	Urinals	3	_Water Service	1
Auto. Dishwasher	Sink, Bar		_Connect to Sewer	r
Sink, Ordinary		_1	_Cesspool, Septic	lank
Disposal				
Refrigerators	Auto. Clothes Washer	<u> </u>	_Dental Chairs	
Drain Floor5	Catch Basins		Drain Area	
	Rain Drains	–	Other Fixtures	
Remarks Hain Nra		at _		
Date of First Inspection / 0 -	2-73 Date d	of Final Ins	pection	14-74
Inspector	Inspec	tor	Aten	All
PHA I		-		

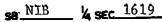


	MULTNOMAH COUNTY	27395
DEPARTMENT OF	ENVIRONMENTAL SERVICES	PERMIT SECTION
	ORT OF PLUMBING INSPECT	
5457	Date	
Address 14400 N Riverga		File No
		RR
Master Plumber A. J. Zinda		
Owner Gilmore Ste		
Stories & Class of Building		
		_Cesspool
		Septic Tank
		Dry Well
Basinst	Jrinals	Water Service
		Connect to Sewer
		Cesspool, Septic Tank
Disposals	Sewer Ejectors	Laundry Tray
Refrigerators	Auto. Clothes Washer	Dental Chairs
Drain FloorC	Catch Basins	Drain Area
		Other Fixtures 2 trlr.conn.
Remarks		
Date of First Inspection	Date of Final Ins	Dection_7-2-76
Inspector	Inspector	Dection 7-2-76
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بالتجالي	m W-89 (4-74) dress	REPO	BUREAU OF I RT OF PLUME Ramsey	NG INS	FOTION Dale -	<u>1/2/79</u> 0215405
			City Metal		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
10	Contractor Stories and class	of building	nd Plbg new	1-stor	3 - 0 3 0 y office	
B	Water Closets Bath, Shower	1N			_ Cesspool _ Conn. Cesspool _	
R	Bath Tub Basins	217			Dry Well	
er.	Sinks Laundry Trays				$_Conn. Sewer 120$ Storm Sewer $_$	
23	Bldg. Pmt Remarks		Water Ser. 2"	1N hspee	Çatch-Basins	
R	,					
	Date of First Ins		_ Inspector	-		Inspector





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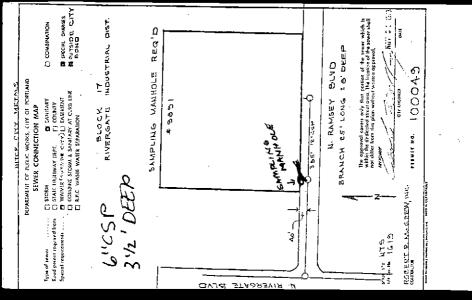
CITY OF PORTLAND, ORBOOM DEPARTMENT OF PUBLIC WORKS

Pmt. No. 100049

Date 3-2-79

SEWER BRANCH

Location 9891 N Ramsey Blvd.
Between
Addition Rivergate Ind. Dist. Lot all Blk. 17
Applicant Robt. McGrew, Inc. waiver - yes
Remarks Constractor tapped manhole for inside drop.
(plastic pipe) ok'd by B. Miller, sampling manhole
inside curb, 6" CSP from sewer manhole to
sampling manhole 3 ¹ / ₂ deep.
Inspected 3-1-79 19 By EkEANERED SEWER BOOK
Book 9 Page 155 New XXXXX Repair



	ldress <u>144</u>	OO N	RTOFPLUMB Rivergate	HING INSPI	CTI	ON Dati	082	07	3-4
			Add			ren	IIIt	· · · ·	· · ·
			Steel Mi						
	Contractor	A.J.	. Zinda Co	0		· · · · ·		86 . F	
			·						
۲,			Hot-Water Tank						<u>.</u> .
717	Bath, Shower_		Auto, Cl. Washer	· · · · · · · · · · · · · · · · · · ·	Conn.	Cesspool	. <u> </u>		
•	Bath Tub		. Auto, Dishwashe	r	Dry V	Vell			
·" •	Basins		Drain Floor		Conn	. Drywell			
тĸ	Sinks		Drain Area	<u></u>	Conn.	Sewer		<u> </u>	_
	Laundry Trays		Rain Drains		Storn	Sewer _			
	Bldg. Pmt		Water Ser		Catch	-Basins _	·		
1	Remarks	4 <u>"R</u>]	<u>P Device</u>	<u>servi</u>	ng	<u>ship</u>	<u>dock</u>		 .
i I	•								
1	Date of First In	spection	I	ate of Final	Inspe	ction 🧾	<u>-11-8</u>	2	
			_ Inspector	Carlie C	Les	<u>u harry</u>	<u>/</u> 1:	nspect	or

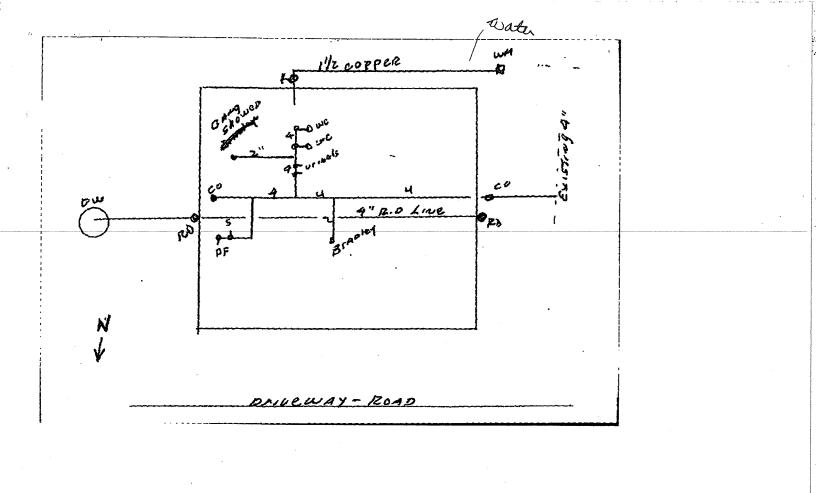
Willsmett. River Ship Dock. R.P. protective Shack. \Box 4" R.P. R.R.

1.12			REPORT OF PLUME		CTION 10 10 10 7/26/8-	
	Address	<u>9891_</u> N	L. Ramsey		Permit500287	
	fLot	Blk	Add		· · · · · · · · · · · · · · · · · · ·	·
	Owner]		<u>lity Metals</u>		· · · · · · · · · · · · · · · · · · ·	· - ' -
	Contactor		<u>leal Plumbi</u>			· ·
					locker/lunch roc	SW
	Water Closets	2N	Hot Water Tank	<u> </u>	Conn. Cesspool	
					Seepage Trench	
	Bathtub		Auto Dishwasher	·	_ Dry Wells 3/6 1N	
	Basins		Service Sinks		Conn_Sewer	
	Kitchen Sink		Ųrinals			•
	Disposal ,		Fountains		-	· ~
	Laundry Tray	1N	Floor Drain		Catch basin	
	. Heat Pump _		Area Drain		Heat Exchanger	
	Water Service		Rain Drains	_	Solar Panel	
	Remarks	Bradle			radley shower 1N	
	Date of First I	nspection	23-82-	Date of Final I	nghection <u>10-14-82</u>	=
	Julmin	Ano	Ung Inspector .		Martinspector	
	DATE			REMAR	KS	
		<u>_</u>				
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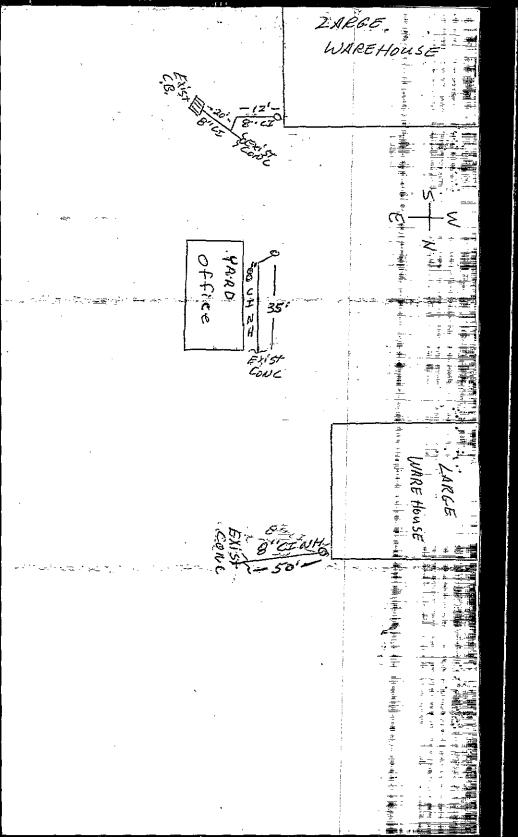
DATE REMARKS 7-25-82 Cour Ground work 7-27-82 Cliff Calles Day in Cas 1 Cuemt St W e D 4"FBS \$° 4 340 C' Ę Copper 9891 n Ra

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MULTNOMAH COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES/PERMIT SECTION REPORT OF PLUMBING INSPECTION										
							Address 9891 N. F	lamsey	Permit NoA	ugust 21919826
							Lot Block	Add's		R
Owner Intercity Metals										
Master PlumberIdeal Plumbing Company										
Stories & Class of Building										
Water Closets2	Rain Drains		_ Connect to Sewer2							
			_ Connect to Cesspool							
Bath Tub	Floor Drain		_ Connect to Septic Tank							
Basins1	Fountain, Drinking		_Water Service1							
Auto, Dishwasher	Sink, Bar		Trailer							
Sink, Ordinary1	Sink, Service		_ Other Fixtures							
Disposal	Urinals	2								
Laundry Tray1	Catch Basins									
Auto. Clothes Washer	Dry Wells	1								
Hot Water Tank1	Swimming Pool									
Aemarks										
Date of First Inspection COURE B-24-92 Date of Final Inspection OK 10-15-82										
Inspector Inspector Mool										
РНА 1										



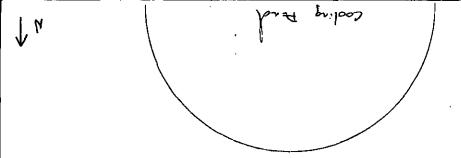
BUREAU OF BUILDINGS Date - 1-1/12/87 REPORT OF PLUMBING INSPECTION 14400 N. Rivergate 174895 Permit Address . Oregon Steel Mills Owner . Island Mech. Contractor Mill Stories and Class of Building _ Water Closets Hot Water Tank Conn. Cesspool __ _____ Auto Cl. Washer __ 1. Shower _ Seepage Trench _____ Bathtub _ Auto Dishwasher Dry Wells _ Service Sinks _____ Conn. Sewer _ Basins ____ 85' \$32 Kitchen Sink _ Urinals Conn. Storm _ · Disposal _ Fountains __ Sewer Cap _ Catch Basin _ /- MOVE Laundry Tray _ _ Floor Drain _____ Heat Pump ... _ Area Drain _ _Heat Exchanger _ Ż Rain Drains Water Service . Solar Panel 4 fixtures \$40 Remarks 12.9.87 2-16-0 _ Date of Final Inspection _ Date of Cover Inspection tenn 1950 an _ Inspector Inspector REMARKS DATÊ Inspect 8" CI No-14ub R. P. to existing Stein Server Conc. 12.9.87 oK

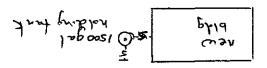


MULTNOMAH COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES/PERMIT SECTION REPORT OF SUBSURFACE SEWAGE SYSTEMS

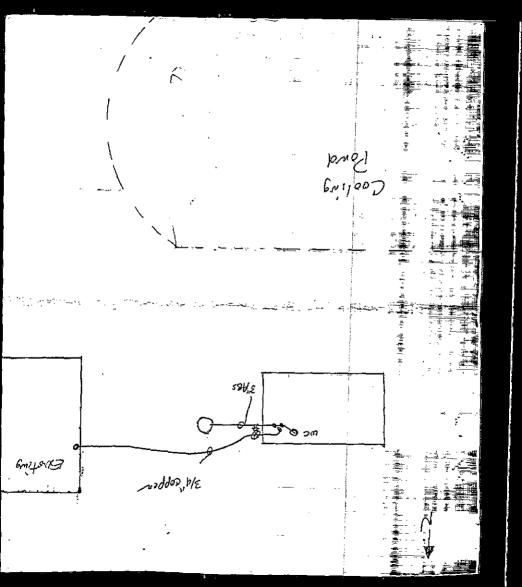
10950

•	Permit Number
	Date <u>1/13/88</u>
Address 14141 N Rivergate Blvd	
Installer A.S.B. Construction	
OwnerSame	
Cesspool N	iew (X) Replacement ()
Septic Tank tompor Any Hold	iew(X) Replacement ()
Drainfield	
Septic Tank/drainfield	
Septic Tank/seepage pit	
Seepage Pit	
Land Feasibility Study No. 148-87	Date
Remarks	
Date of inspection_3-878	
Inspector Lawrord	



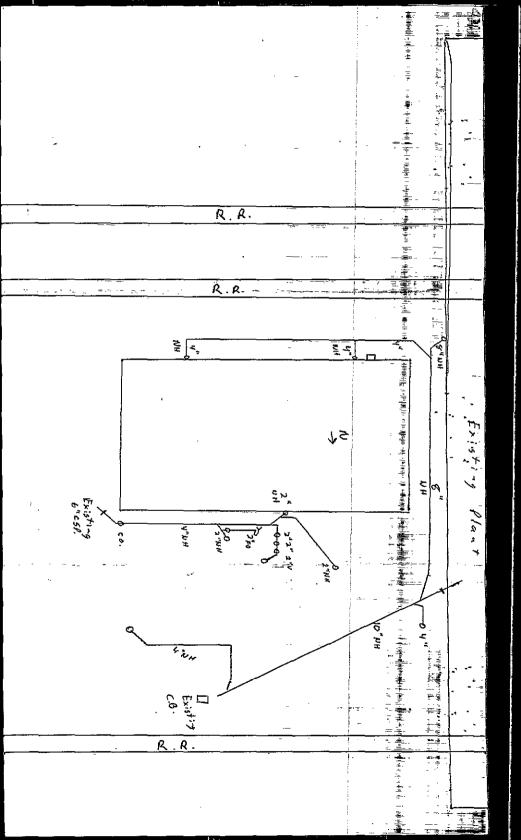


BUREAU OF BUILDINGS REPORT OF PLUMBING INSPECTION Date 1/19/88 Permit 180195 14400 N. Rivergate Address ASB Const Owner Contractor Milwaukie Plumbing IM. Building Comm. Stories and Class of Building Water Closets Hot Water Tank _____ Conn. Cesspool _____ _ Auto Cl. Washer _____ Seepage Trench _____ Shower Bathtub _Auto Dishwasher ____ Dry Wells _ Service Sinks _____ Conn. Sewer ___ \$32 Basins Urinals _____ Conn, Storm _____ Kitchen Sink Fountains _____ Sewer Cap _____ Disposal _ . Laundry Tray _____ Floor Drain _____ Catch Basin ____ Heat Pump ____ ·____ Area Drain ______ Heat Exchanger __ Water Servic\$32 Rain Drains _____ Solar Panel Remarks fixtures \$30, F 3 _ Date of Final Inspection _____ 3-16-8-8 Date of Cover-Inspection ____ Inspector _____ le lla Inspector REMARKS DATE Can't Locate Under ground IA. Violatión 11 3.-1-87 Connections Not Made " И 3-3-88 105 connected 3-8-88 H : 11 NON-potable line 3-11-88 Missed 21

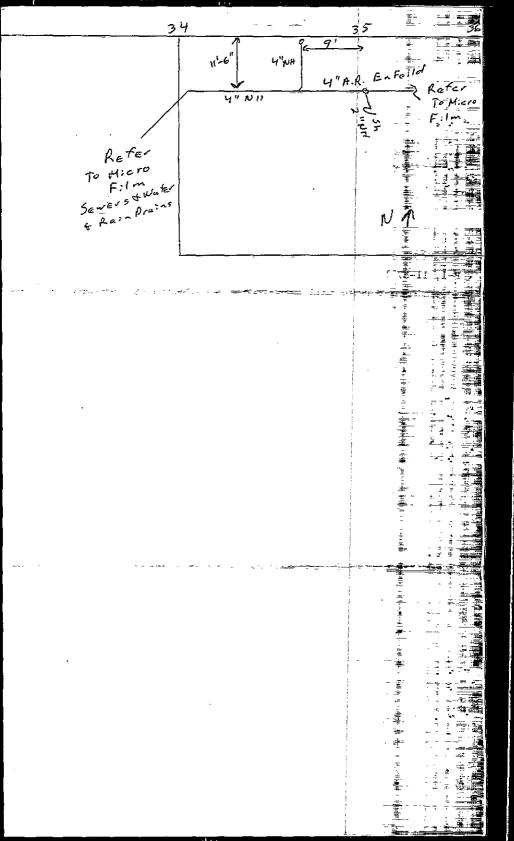


		AU OF BUILDINGS		Date	08/10/	/88
	00 N Ri			Permit		
Owner			 		ent - international internationa	
	emaster	Plymbing	& Htg.	Co		
Stories and Class of			-			
_Water Closets	1-N			Conn. Cesspo		
`* . .		_Auto Cl. Washe	r	Seepage Trend	ch	
Bathtub				Dry Wells		<u> </u>
Basins	<u>~ N</u>	_ Service Sinks)-0	Conn. Sewer		<u></u>
- Kitchen Sink	<u>i - N</u>	_Urinals	<u>i~N</u>	Conn, Storm		
			1-N.	Sewer Cap		
Laundry Tray				Catch Basin		
Heat Pump Water Service <u>16</u>		_ Area Drain		Heat Exchange	-	 _
Water Service <u>10</u> Bemarks <u>7</u> fi				Solar Panel		
			Date of Fin	al Inspection 1	-4-58	······································
Oale of Cover Inspe		Inspecto			Ins	nector
DATE			<u> </u>	ARKS	1	
DATE	· ·		ГЦШИн 			
			 ,	· · · · · · · · · · · · · · · · · · ·		·
8-12-88	Signo	=d Un	<u>de-q</u>	round		. <u>.</u>
9-14-88	5	d Tox	Doit	round	,	
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11-4-88	Sinne	= <u>d</u> F:.	ng!			
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(P-1, 11-87)



BUILDINGS 9-12-88 REPORT OF PL **UMBING INSPECTION** Date 14400_N Rivergate 185613 Address Permit Bidg Maintence Or Steel Mills Owner BP#88-106410 Western Plbg Inc Contractor Commercial Stories and Class of Building 6 Water Closets Hot Water Tank Conn. Cesspool 2 Shower Auto Cl. Washer _ Seepage Trench . Bathtub __ Auto Dishwasher Dry Wells 8 Conn. Sewer 100' \$32 Basins_ Service Sinks Kitchen Sink Urinals_ Conn. Storm Disposal Fountains Sewer Cap 2 Laundry Tray_ _ Floor Drain _ Catch Basin Heat Pump _ Area Drain __ Heat Exchanger Remarks <u>41</u> fixtures \$410-Bid under old Pmt schedule Date of Cover Inspection 11 - 30 - 8-8-Date of Final Inspection Inspector DATE REMARKS Deer Underground OK. 10-4-88 Signed Underground 120' - 6" PUC St. Sewer 100' - 4" PVG Sa- Sawer + 120'-2'2 Copper"L" Water Outside Blog MHS t_{o} Main 12" Ductile Iron Main OK. 19-12-88 Signed. Water Service, Santist Sever South 6" Rain Drains OK 11-10-88 East End NE Corner hrew roof OK 70 Cover 11-28-88 Topost on W/d WEU Hec Heid liping + Showers Topost & Kain Vising 11-30-88 Signed Showers ØK 12-8 88 189 popeet ful times OK KRH ^{fts}909 909 CES SeciAL 192275 SEFTAL 195017 Size (P-1, 11-87 Size



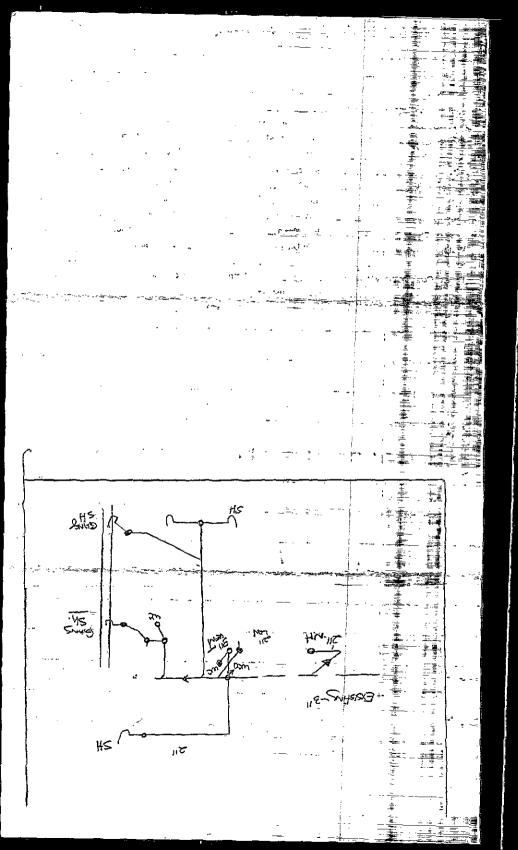
REI	BUREAU OF BUILDINGS PORT OF PLUMBING INSPECTIO	N Date <u>3/23/89</u>
Address1_44	00 N Rivergate	
Owner		
Contractor <u>Rea</u>	listic Plbg.	
Stories and Class of	Commercia	1
Water Closets		Conn. Cesspool
Shower	Auto Cl. Washer	Seepage Trench
Bathtub	Auto Dishwasher	Dry Wells
Basins	Service Sinks	Conn. Sewer
Kitchen Sink <u>1-</u>		Conn. Storm
Disposal	FountainsN	Sewer Cap
	Floor Drain	Garches DILED
	Area Drain	NAHeat Exchange VEV
•	······································	Solar Panel
Remarks 3 f	ixtures \$36.00	
	ection <u>4-12-89</u> Date of	-Pinal-Fispection/~//~23_
	Inspector.	inspector.
DATE		EMARKS
DATE 3-3/-89	R	یا همین میشوند. اور می بارد میشود به با از اور می واشد کار میشود و معین میشود و با با میشود کار این و این مراجع
	R Violations	emarks on Vaderground
3-31-89	R	EMARKS on Underground wound
3-31-89	R Violations Signed Underg	EMARKS on Vaderground round Topout
3-31-89 11-3-5-9 4-10-69	R Violations Signed Underg Not Rendy For	EMARKS on Vaderground round Topout
3-31-89 11-3-5-9 4-10-69	R Violations Signed Underg Not Rendy For	EMARKS on Vaderground round Topout
3-31-89 11-3-5-9 4-10-69	R Violations Signed Underg Not Rendy For	EMARKS on Vaderground round Topout

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		Date
Address 14400 N Riv	vergate	Permit _191396
owner Oregon Ste	el	
Contractor Realistic	Plbg.	
Stories and Class of Building	Commercial	
		_ Conn. Cesspool
Shower	Auto Cl. Washer	_ Seepage Trench
Bathtub	_Auto Dishwasher	_ Dry Wells
Basins	_ Service Sinks	Conn. Sewer
Kitchen Sink	Urinals	Conn. Storm
Disposal	_ Fountains	Sewer Cap
		_ Catch Basin
Heat Pump	_ Area Drain	ties Exchanger
Water Service	_ Area Drain Area Drains \$33,00A	Solar Parky VEL
Remarks		
Date of Cover Inspection	3-8-9 Date of Einer In	
	Inspector	Inspector

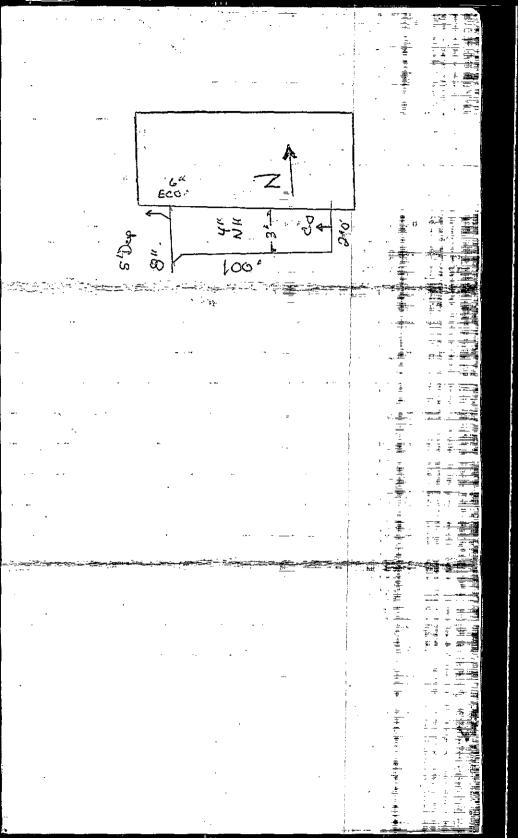
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BE	BUREAU OF BUILDINGS PORT OF PLUMBING INSPECTION Date _ 6/15/89	
	14400 N Rivergate192821	
	Oregon Steel Mills	
	Hellums Mech.	
	Commercial	
		• • • • • •
•	Hot Water Tank Conn. Cesspool Auto Cl. Washer Seepage Trench	
- Bathtub		•
Basins	Service SinksService Sinks	
	Urinals Conn. Storm	÷-,
	Fountains Sewer Cap	
Laundry Tray	- F	
Heat Pump	Area Drain Heat Exchanger	
Water Service	Rain Drains Solar Panel	
Remarks	8 fixtures \$96.00	
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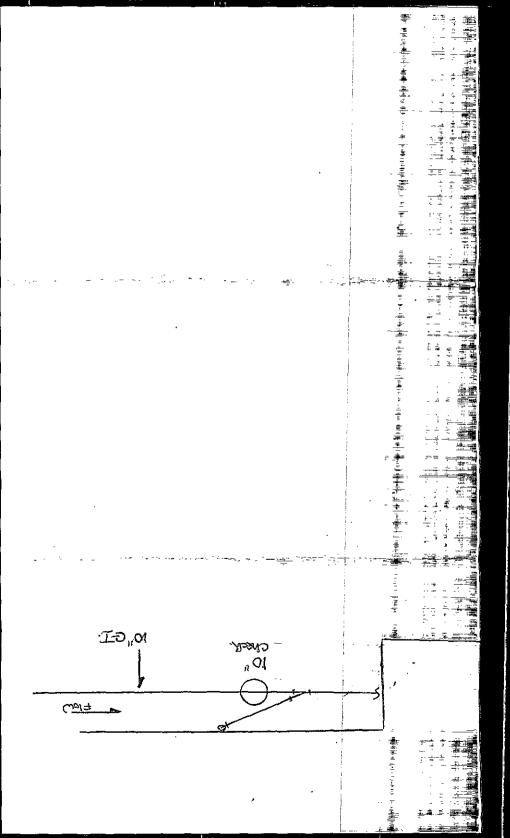
BUREAU OF BUILDINGS Date ____ 3~5-90 -REPORT OF PLUMBING INSPECTION Permit_100990 14400 N. RIVERGATE BLVD: Address 0.T.K.M Owner. PENISULA PLUMBING CO. Contractor . OREGON STEEL MILLS Stories and Class of Building . Hot Water Tank Water Closets Conn. Cesspool Auto Cl. Washer Shower Seepage Trench Bathtub __ Auto Dishwasher Dry Wells Basins _ Service Sinks Conn. Sewer __ Kitchen Sink Urinals Conn. Storm _ Disposal _ Fountains Sewer Cap _ Laundry Tray. Floor Drain ___ Catch Basin Heat Pump_ Area Drain . Heat Exchanger Water Service Rain Drains Solar Panel \$36_Fixtures \$468 Remarks 4-10-00 Date of Cover Inspection Date of Final Inspection, -Inspecto DATE REMARKS 3-8-90 2. SHRWER - MEN WERE REAM west-coener. 3-12-90 2-14-90 Roomelitet d'a Sewer From Addition to Exist 19-90 NOT Kegt 440 A-10-90 opciet Complete on New a 4-17-90 two en howers Ja Au mA 1.0 The m 4-11-90 ole m Kd CRIER 1 5-14-40 MEN REST Room West End M 6-5-90 VIOLATIONS . Dlocked F.D. WATERS REVERSED ON Shower in women Locken Loom

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REI	BUREAU OF BUILDINGS PORT OF PLUMBING INSPECTION	Date <u>5/22/90</u>
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Contractor		
_	of Building	
	Hot Water Tank	-
	Auto Cl. Washer	
Bathtub	Auto Dishwasher	Dry Wells
Basins	Service Sinks	Conn. Sewer
Kitchen Sink	Urinals	Conn. Storm
Disposal	Fountains	Sewer Cap
Laundry Tray	, Floor Drain	Catch Basin
Heat Pump	Area Drain	Heat Exchanger
Water Service	Rain Drains <u>\$36</u>	Solar Panel
Remarks	· · · · · · · · · · · · · · · · · · ·	
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Address 14400 N River Gate Permit 102902 Owner Harder Mech. Constractor Contractor Stories and Class of Building Oregon Steel Mill Water Class of Building Oregon Steel Mill Stories and Class of Building Stories and Class of Building Auto Cl. Washer Sepage Trench Bathub Auto Dishwasher Diy Wells Bashis Service Sinks Conn. Storm Bashis Service Sinks Conn. Storm ILaundy Tray Floor Drain Cathe Basin Heat Pump Area Drain Heat Exchanger Water Service Rain Drains Solar Panel Remarks 2 fixtures \$27 Solar Panel Date of Ever Inspector Inspector Inspector Date of Ever Inspector Inspector Inspector Date of Ever Inspector Inspector Inspector DATE REMARKS Inspector Inspector I/2 5/90 Daspect 4/ "Inseps for Floor drain Inspector I/2 1/2 00 Daspect 1/2 More Much to Hoork ap firm	RE	BUREAU OF BUILDINGS	Date <u>6/21/90</u>
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REF		Date <u>1-11-91</u>
Address 1440	O N RIVERGATE	Permit 110149
Owner	ON STEEL MILL	
	L MECHANICAL	
Stories and Class o	f Building MILL	
Water Closets	Hot Water Tank	Conn. Cesspool
Shower	Auto Cl. Washer	Seepage Trench
Bathtub	Auto Dishwasher	
Basins	Service Sinks	IN A-D DAD 200 1666
Kitchen Sink	Urinals	
Disposal	Fountains	Sewer Cap
Laundry Tray	Floor Drain	Catch Basin
Heat Pump	Area Drain	Heat Exchanger
Water Service	Rain Drains	Solar Panel
Remarks		
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BUREAU OF BUILDINGS Date 3-20-91 REPORT OF PLUMBING INSPECTION Permit 111335 14400 N Rivergate Address . Owner Peninsula Plbg Co Contractor Oregon Steel Mill Fire Station Stories and Class of Building Hot Water Tank _____ Conn. Cesspool _____ Water Closets __ Auto Cl. Washer _____ Seepage Trench _____ Shower Bathtub _ Auto Dishwasher _____ Drv Wells _____ Service Sinks Conn. Sewer Basins _____ Kitchen Sink ______ Urinals _____ Conn. Storm _____ Disposa) Fountains Sever Cap Laundry Tray ______ Floor Drain _____ Catch Basin _____ Heat Pump ______ Area Drain ______ Heat Exchanger _____ Rain Drains _____ Solar Panel _____ Water Service Fix \$91 Remarks Date of Final Inspection inspecto DATE REMARKS Inspirt top out test to W, W, o Ven 4.2.91 No-hub Waste + Vento Copper Wat all plante back to existing

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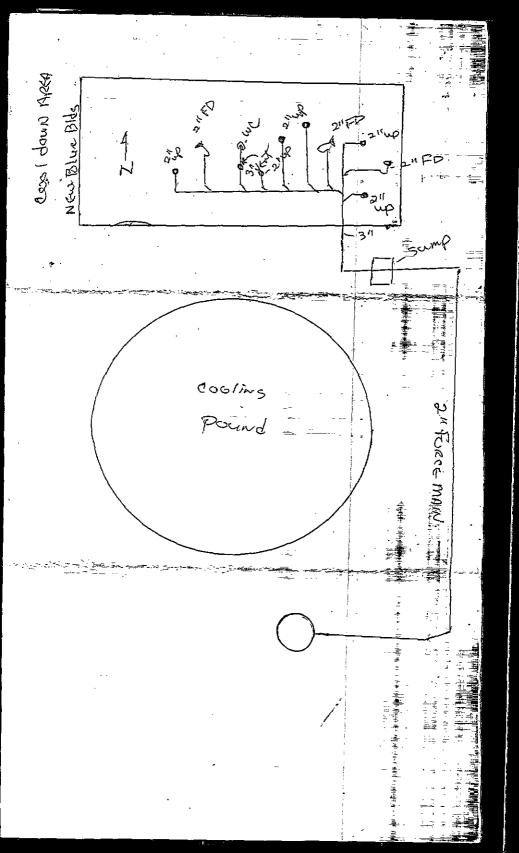
DATE: 5/3/91

ADDRESS: 14141 N Rivergate

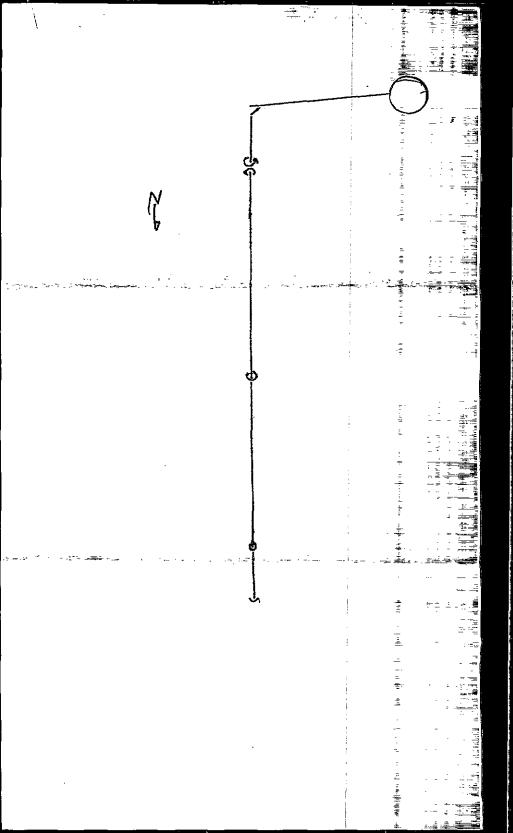
CONTRACTOR/OWNER: Oregon Steel Mills ٩, Hild my Х SEPTIC TANK SEWER CONN. SEEPAGE PIT DEMOLITION **CESSPOOL** mand dell DATE: 5/2/91 INSPECTOR

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OF BUILDINGS 5-13-91 REPORT OF PLUMBING INSPECTION Date 14400 N Rivergate Blvd 112245 Address ± Permit Oregon Steel Owner_ Island Mech Inc Contractor Industrial Stories and Class of Building Water Closets Hot Water Tank Conn. Cesspool Seepage Trench Shower. Auto Cl., Washer, Bathtub . Auto Dishwasher Dry Wells Conn. Sewer 500 \$156 11 Basins ____ Service Sinks Conn. Storm Kitchen Sink Urinals. Fountains _ -Sewer Cap Disposal . Floor Drain Laundry Tray - Catch Basin Heat Pump_ Area Drain Heat Exchanger. Water Service Rain Drains - Solar Panel Remarks 2 Fix. \$156 -12-0 9-27 Date of Final Inspection Date of Cover Inspection Inspector nspecte STATE OF ST REMARKS DATE 5-15-91 53091 N0 530-91 J.Ca mo 6-1-9 NO C 67-91 8-13-91 VIDIATION Coted to cur (P-1, 11-87)



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<u> </u>		rs, Inc.
Stories and Class of B	uilding <u>COM</u>	د د به دود ۲۰۰۵ هورونی در این میبود. به مطلوع وی وی در در در این میبود.
Water Closets	Hot Water Tank	Conn. Cesspool
		Seepage Trench
Bathtub		
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		Conn. Storm
Disposal	Fountains	Sewer Cap
Laundry Tray	Floor Drain	Catch Basin
		Heat Exchanger
- Water Service	Rain Drains	Solar Panel
Remarks		
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Address 14400 N RI	/ERGATE_BIVD	Rermit <u>114039</u>
Owner OREGON STEE		
Contractor ISLAND	MECHANICAL	
Stories and Class of Building	THEFT THE LAD	5. Bldg.
		Conn. Cesspool
Shower 2	_ Auto Cl. Washer	Seepage Trench
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Basins3	_ Service Sinks	Conn Sewer
Kitchen Sink	Urinais	Conn. Storm
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Heat Pump	_ Area Drain	Heat Exchanger
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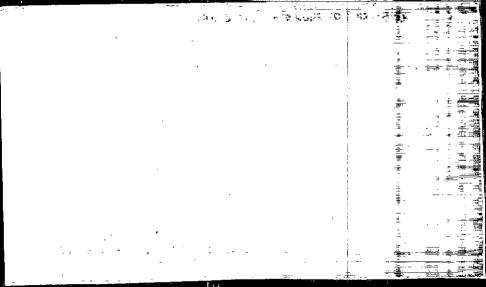
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	PORT OF PLUMBING	NSPECTION	Date	9-13-91
Åddress	14400 N RIVE		Permit	114524
Owner	OREGON STEEL	MILLS	·	
Contractor	RETERSON WES	TERN CORP		
	of Building CO	MM	3-1-15	
	Hot Water T			
	Auto Cl. Wa	l		
Bathtub	Auto Dishwa	ichar (Dr.	Walle	
Basins	Service Sink	s . Cor	nn. Sewer	85' \$36
Kitchen Sink	Urinais	Cor	nn. Storm	<u>90 \$36</u>
Disposal	Fountains	Sev	ver Cap	
Laundry Tray	Floor Drain _	Cat	ch Basin	
Heat Pump	Area Drain	Hea	at Exchanger_	
Heat Pump Water Service	70 \$36 Rain Drains	140 \$66 mso	an Panet <u>.</u>	
Remarks	<u> 5 Fix \$65 </u>	UNAPP	HUV	<u>eu</u> –
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Address	14400 N	<u>Rivergate</u>	31vd.	Permit114	1864	
Owner	Oregon	Steel Mill n- Western				۰.
Contractor _			<u></u>			Æ
Stories and (Class of Building	<u>Manu- /B-2</u>	<u> </u>			·;
Water Close	ts	_ Hot Water Tank	Co	nn. Cesspool		· :
Shower	· · · · · · · · · · · · · · · · · · ·	Auto Cl. Washer	See	epage Trench		
Bathtub		Auto Dishwasher	Dŋ	/ Wells		
Basins		Service Sinks		nn. Sewer		
Kitchen Sink	;	Urinals	Co	nn. Storm		·
Disposal		Fountains	Ser	wer Cap		-
Laundry Tray	у	Floor Drain	Cat	tch Basin		
Heat Pump		_ Area Drain	He	at Exchanger		
Water Servic	ce	Rain Drains	nada	lar Panel		
Remarks	New		DDDU	VED.		_
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·····		Inspector		a	Inspector	



BUREAU OF BUILDINGS 3/3/93 **REPORT OF PLUMBING INSPECTION** Date 14400 N RIVERGATE 130935 BIVD Address Permit Oregon milla Owner Contracto PENINSULA PLUMBING CO. COMMERCIAL Stories and Class of Building Water Closets Hot Water Tank Conn. Cessoool Shower_ Auto Cl. Washer Seepage Trench __ Auto Dishwasher Bathtub Dry Wells Service Sinks Conn. Sewer Basins Conn. Storm Kitchen Sink Urinals Disposal Fountains Sewer Cap Laundry Tray _ Eloor Drain Catch Basin Heat Exchanger Heat Pump Area Drain Water Service _ Rain Drains Solar Panel \$150 Remarks 10 FIX-5-26-93 5-6-93 Date of Final Inspection Date of Cover Inspection_ rinspector Inspector REMARKS DATE 3-19-83 monest 10 San, 30 + 12 Storm, CB. + Sewers AL mut 2-C.B Schotest R.D.to Stom off Ble 3-22-93 put Saver tap + line + 1/4 Water Services 3.24-93 3-25-93 it and work test to 10 herd. I top out not sens 5-5-93 No-Hub waste + Vente 5-6-93 est topant testor Coppen Water 100

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				 March 1999 /ul>		
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				երացի երջանցերին, որ ներջանցերը է սիները է երջանցերը։ Գրանությունները	и и польки и и польки польки и br>Польки и польки и пол и може и польки и пол	
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RE	PORT OF PLUMBING INSPECTIC	Date <u>3/18/93</u>
Address 1440	O N RIVERGATE BLVD	Permit_ <u>131215</u>
Owner		مىيىنى بىرى يېزىر ،
Contractor PEN]	INSULA PLUMBING CO.	
Stories and Class	COMMEDCIAL	
	-	Conn. Cesspool
		Seepage Trench
	Auto Dishwasher	Dry Wells
	Service Sinks	Conn. Sewer <u>100' \$41</u>
Kitchen Sink	Urinals	Conn. Storm 200 \$75
	Fountains	Sewer Cap
Laundry Tray	Floor Drain	Catch Basin
Heat Pump	Area Drain	Heat Exchanger
Water Service	00 * \$41_ Rain Drains	Solar Panel
Remarks		
Date of Cover Insp		of Final Inspection
	inspector	Inspector
DATE		REMARKS
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1-5-98	UNAPPOVE	- MAAS
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RE	BUREAU OF BUILDINGS	Date 4/21/93
Address	14400 N RIVERGATE BLVD	Permit 131851
Owner		
-	PENINSULA PLUMBING, CO	
Contractor	COMMEDCIAL	
Stories and Class of	t banany	in the second
	Hot Water Tank	2. Conn. Cesspool
	Auto Cl. Washer	Seepage Trench
· · · · · · · · · · · · · · · · · · ·	Auto Dishwasher	Dry wells
	Service Sinks	
		Conn. Storm Sewer Cap
-		······································
Laundry Tray Heat Pump		Catch Basin
		1 Solar Panel
Remarks		
Date of Cover Inspe		
Date of Oover mape	Inspector	inspector
DATE	REM	
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LOCATION: 14400 N RIVERGATE BLVD PERMIT NUMBER:PLM93-07844						-	
05-OCT-93 CUSTOMER:OREGON STEEL MILLS	19) } 1		۰.			
APPLICANT: TYPE OF WORK: REM USE:]	IND .		•				
HEINZ MECHANICAL INC Lab- 1- Blog							- [],
PERMITED WORK:				·			·
	4 				-	•••	· · · ·
NO. OF FIXTURES:2ADDT'L FLOORS:0NO. OF BRANCHES:0REP. WATER HEATER:0SOLAR UNITS:0MOBILE HOME SERVICE:0							
CONTRACTOR: HEINZ MECHANICAL INC PHONE:503 220-0855 Notes Updated By							
					с 1. 1. 1 ^{.2} ж.	• (• · · · · · · · · · · · · · · · · · ·	
ACTION Hold Date1 Date2 Date3			· · · · ·				
APPLICATION RECEIVED F 05-OCT-93	05-00	T-93	LN ·	1. 1. 1. 1. 2. 1.			
2 New Func Hoods		· ·			•		tin Le Lie
10-20-93 Rough Coven Plm 10-20-93 Not Ready h	· ·]						
10-20-83 Not Ready "	-						
10/23/93 VIOLATION REFER TO HOTICE OG		.4			· · · · ·		
1-4-94; Inspect Emerginey Shower			1	 		1	1.
head own existing F.D. ah. Re-took Eye work & replace		• 1 .					* • •
trap on sink		ì ! • .	-				
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LOCATION: 14400 N RIVERGATE BLVD PERMIT NUMBER: PL M93-09892

29-NOV-93 CUSTOMER:OREGON STEEL MILL-CODE UPGRA	
APPLICANT: TYPE OF WORK: REM USE: IND	LIVING UNITS:000
HEINZ MECHANICAL INC Fab 1- Bldg	
PERMITED WORK:	
NO. OF FIXTURES:3ADDT'L FLOORS:0NO. OF BRANCHES:0REP. WATER HEATER:0SOLAR UNITS:0MOBILE HOME SERVICE:0	
CONTRACTOR: HEINZ MECHANICAL INC PHONE: 503 220-0855 Notes Updated By	
ACTION Hold Date1 Date2 Date3	
APPLICATION RECEIVED F 29-NOV-93 29	P-NOV-93 LN
1-4-94: Inspect Shower peadower F.D. emergency, Shower Drench Re-hack Eye wash Re-hack Sink new trap Acid trapso waster ox Final 1-Shower emergency Kin Hangen Sink 1-4-94 Jab- 1-Bleg.	

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LOCATION: 14748 N RIVERGATE BLVD PERMIT NUMBER:PLM95-00733 20-APR-95 CUSTOMER:PLM95-00733	
DESCRIPTION/LOCATION: new construction	-
TYPE OF WORK:NEW USE:COM	• • • • • • • • • • • • • • • • • • •
APPLICANT: CHRISTIAN PLUMBING, INC. 638-8231	
PERMITED WORK:	
NO. OF FIXTURES:7ADDT'L FLOORS:0NO. OF BRANCHES:0REP. WATER HEATER:0SOLAR UNITS:0MOBILE HOME SERVICE:0	
CONTRACTOR: CHRISTIAN PLUMBING, INC. PHONE:638-8231	• • •
Notes Updated By	
ACTION Hold Date1 Date2 Date3	
APPLICATION RECEIVED F 20-APR-95 20-APR-95 KS	
WATER CLOSETS 2_SHOWER / BATHTUB_BASINS 2 OTHER With About ()	
SINKS DISPOSAL LAUNDRY TRAY URINALS FLOOR DRAINS	
FINAL APPROVAL INSPECTOR MAAD DATE: 9-11-25	:
CONNECTION FINAL: INSPECTOR: DATE:	

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OCATION: 14748 N RIVERGATE BLVD		•	ul must Hat	J	
PERMIT NUMBER: PLM95-00733	7				
20-APR-95 CUSTOMER:PLM95-00733 USE:CO	M	9- 1	ulu		
DESCRIPTION/LOCATION: new construction		- -			~
TYPE OF WORK:NEW USE:COM LIVING UNITS:000)	λ	-3	•••	
APPLICANT:		4-2			-
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NO. OF FIXTURES:7ADDT'L FLOORS:0NO. OF BRANCHES:0REP. WATER HEATER:0SOLAR UNITS:0MOBILE HOME SERVICE:0	The second s				
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CONTRACTOR: CHRISTIAN PLUMBING, INC. PHONE:638-8231			9		:
Notes Updated By			A LINSON		
ACTION Hold Date1 Date2 Date3		1964年 - 秋山 - 秋山 - 小山山 - 秋山	Exsts wend +		
FIXTURES WATER CLOSETS 2_ SHOWER _ { BATHTUB BASINS 2		HER HWH (
SINKS DISPOSAL LAUNDRY TRAY URINALS	FLOC	DR DRAINS			
FINAL APPROVAL INSPECTOR MUS DATE: 1-10					
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LOCATION: 14400 N RIVERGATE BLVD N I C N L PERMIT NUMBER: PLM95-00863

 10-MAY-95
 CUSTOMER;OREGON;STEEL MILLS
 USE;COM

 DESCRIPTION/LOCATION: 240' of rain drain and 20' franch drain
 TYPE OF WORK:REP
 USE;COM
 LIVING UNITS:000

 APPLICANT:
 DISHOPS DACKNOE & CONCIDETE SED
 502.006 0006

BISHOPS BACKHOE & CONCRETE SER 503 286-8036 PERMITED WORK:

LENGTH OF STORM : 20 LENGTH OF WATER : 0 LENGTH OF WATER : 0 CONTRACTOR: BISHOPS BACKHOE & CONCRETE SER PHONE: 503 286-8036

Notes 1-5-99 MAAD June Durd Updated By

ACTION Hold Date1 Date2 Date3 APPLICATION RECEIVED F 10-MAY-95 KS

PERMIT ISSUED F 10-MAY-95 KS

FIXTURES WATER CLOSETS SHOWER BATHTU	JBBASINS	OTHER
SINKS DISPOSAL LAUNDRY TRAY	URINALS	_ FLOOR DRAINS_
FINAL APPROVAL INSPECTOR	DATE:	
CONNECTION FINAL: INSPECTOR:	DATE:	

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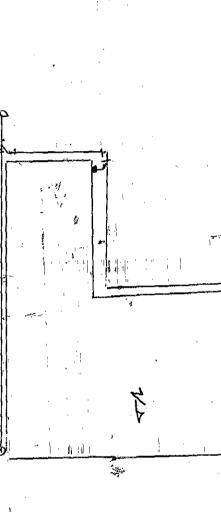
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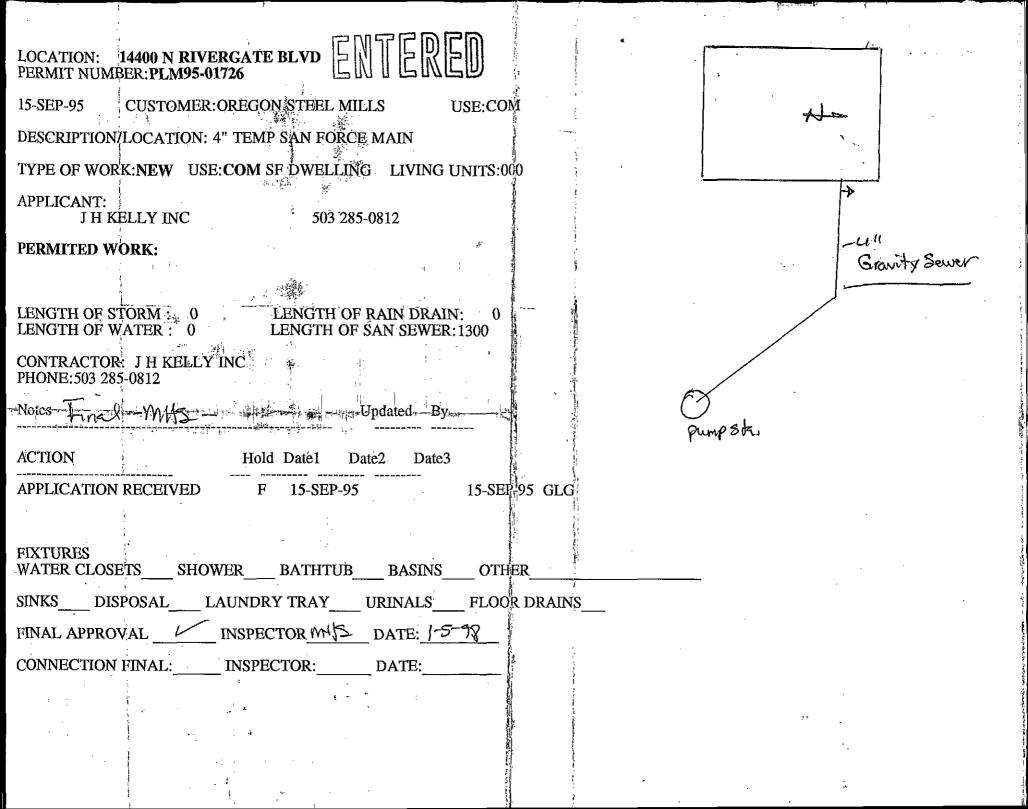
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	PLUMBING INSPECTION REQUEST FORM		Report: PLMINSP.REF
·	: 14400 N RIVERGATE BLVD		PERMITTED WORK:
Plbg Permit No	: PLM95-01362 Status : P	Number of Fixtures:	
Date Issued Date Updated	27-JUL-95 Issued By : SB 27-JUL-95 Updated By : SB	Number of Branches:	0 Sanitary Sewer - Feet: 0
Permittee	Myers & Sons Plumbing Inc	Solar Units : In-Kind Water Htr :	0 Storm Sewer - Feet: 0 0 Rain Drains - Feet: 0
Permittee Phone		Number of Floors :	0
Customer	OREGON STEEL MILLS ENGLU		FIXTURES:
Description	14 fixtures - 2nd floor	Water Closets :	Kitchen Sinks : Area Drains :
		Urinals Wash Basins : 2_	Dishwashers : Catch Basins : Garb. Disposal: Drywells :
Notes		Bathtubs : 2	Drink Fountain: Soak Trench : 2-Comp Sinks : Interceptor
		Bidets	3-Comp Sinks : Sewer Caps :
		Water Heaters : Clothes Washers:	Floor Sinks : Conn. Storm :
Work Location		Laundry Trays : Serv/Mop Sinks :	Bar Sinks : Rain Drains : Hub Drains : Bck Wtr Valve:
		Floor Drains	Backflow Prvtr: Z Reversal
Building Use Building Work	: COM Sewer Connect: N : NEW	Remarks . :	Baddley - 2
Building Owner	OREGON STEEL MILLS INC		-
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Final Inspection	n: MA phalance Date: 1-598		

LOCATION: 14400 N RIVERGATE BLVD 12 Watto vog 33215 Second floor Read woon 10:20-85 Deport 1 ST Floor WEST MAT 1/2" wats 009 33244 PERMIT NUMBER: PLM95-01362 BLD95-01594 27-JUL-95 CUSTOMER: OREGON STEEL MILLS USE:COM DESCRIPTION/LOCATION: 14 fixtures - 2nd floor TYPE OF WORK:NEW USE:COM LIVING UNITS:000 APPLICANT: Myers & Sons Plumbing Inc 000-0000 **PERMITED WORK:** NO. OF FIXTURES: 14 ADDT'L FLOORS: 0 NO. OF BRANCHES: 0 REP. WATER HEATER: 0 MOBILE HOME SERVICE: 0 SOLAR UNITS: 0 I BII CONTRACTOR: Myers & Sons Plumhing Inc. BH Updated By No $\overline{\nabla}$ ACTION 指old Date1 Date2 Date3 27-JUL-95 SB. APPLICATION RECEIVED F 27-JUL-95 FIXTURES WATER CLOSETS __ SHOWER 2 BATHTUB BASINS 2 OTHER Depiley. 2 SINKS DISPOSAL LAUNDRY TRAY URINALS FLOOR DRAINS 2 PF-1 R-P. Backflows - 2 FINAL APPROVAL _____ INSPECTOR CONTRACT DATES CONNECTION FINAL: INSPECTOR: DATE: 9-5-95 CORRECTIONS Whell 7-6-95 Jopont Mitt: underground Approve IT

9-16-95 - Ko "Storm - CAS #1 10 + Later O plus 14112 8" RAM Leader Bust wit NEW Bldg LOCATION: 14400 N RIVERGATE BLVD PERMIT NUMBER: PLM95-01660 Extension. CUSTOMER: OREGON STEEL MILLS 9-27-95 20" Storn From NEW shipping office 07-SEP-95 USE:COM DESCRIPTION/LOCATION: Storm, San. & Water Extensions to a new shipping office To MA #3 10-4-85- STORT NOT READY MULLI 10-6-95 221'29"Storm MAN TYPE OF WORK:REM USE:COM LIVING UNITS:000 285-6550 **APPLICANT:** J H KELLY INC 503 285-0812 6580 DENNIS/ALLEN DONL **PERMITED WORK:** LENGTH OF STORM: 3000 LENGTH OF RAIN DRAIN: 800 LENGTH OF SAN SEWER: 530 LENGTH OF WATER: 300 CONTRACTOR: J H KELLY'INC PHONE: 503 285-0812 Updated --- By--Notes ACTION Hold Date1 Date3 Date2 F \ 07-SEP-95 07-SEP-95 KS APPLICATION RECEIVED FIXTURES WATER CLOSETS SHOWER BATHTUB BASINS OTHER DISPOSAL LAUNDRY TRAY URINALS FLOOR DRAINS SINKS INSPECTOR FINAL APPROVAL DATE: CONNECTION FINAL: INSPECTOR: DATE:

E 7(35 1s duns .S.E. Cre N 2505.8L E 7,826,01 N 7451 E 2717,50 JUL 14 HIPPING BAY B.R. CROSSING EFVE 10 SILEVE A DUCTRE THON CHE BEH. = O.D. Tor . SIBEVE 20 LONG SCAL 9 31.87 0, 37-02 N 2360 VOID LOWERED STEEV o silver 21 SURVE 5 mar Pre N + 378.84 E - 3705, 38 INI, 31-1 JAN 24 SIGLIE 30.01 TO GO UNDER 295 "IN. 1" - 29.06 PER DENMS ... 28,15 VEW LOCATION SFET. А. OR 10" SLEE " . TAKEN @ 1. M. R.R. TRICKS 544.6.1 = 2' PAGE 6 ,管理要指 1 1 1 1 1 5 4 5 Net Tay



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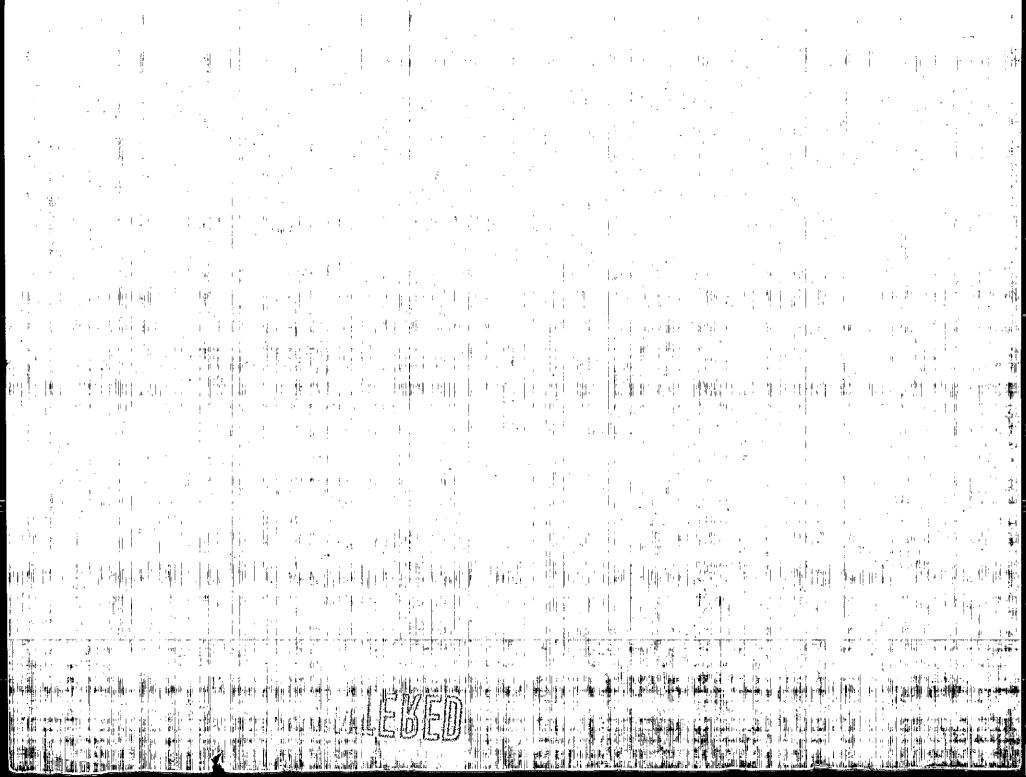
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· .	PLUMBING INSPECTION REQUEST FORM TEDE	Report: PLMINSP.REP
Address	14400 N RIVERGATE ENULSING	PERMITTED WORK:
Plbg Permit No	PLM96-01148 Status : I	Number of Fixtures: 4 Water Service - Feet: 70
Date Issued Date Updated Permittee Permittee Phone	17-MAY-96 Issued By : RRB 17-MAY-96 Updated By : RRB J H KELLY INC 360 737-6790	Number of Branches: 0 Sanitary Sewer - Feet: 140 Solar Units : 0 Storm Sewer - Feet: 0 In-Kind Water Htr : 2 Rain Drains - Feet: 0 FIXTURES:
Customer	OREGON STEEL MILLS	Water Closets : Kitchen Sinks : Area Drains :
Description	installation of modular toilet facility	Urinals : Dishwashers : Catch Basins : Wash Basins : Garb. Disposal: Drywells : Bathtubs : Drink Fountain: Soak Trench :
Notes		Showers :2-Comp Sinks :Interceptor : Bidets :3-Comp Sinks :Sewer Caps : Water Heaters :Hand Sinks :Conn. Sewer : Clothes Washers:Floor Sinks :Conn. Storm :
Work Location		Laundry Trays : Bar Sinks : Rain Drains : Serv/Mop Sinks : Hub Drains : Bck Wtr Valve: Floor Drains : Backflow Prvtr: Reversal : Image: Serv Mop Sinks : Backflow Prvtr: Reversal :
Building Use Building Work Building Owner	COM Sewer Connect: N NEW OREGON STEEL MILLS INC	Remarks :
	INSPECTION HISTORY:	
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PLUMBING INSPECTION REQUEST FOR Report: PLMINSP.REP 14400 N RIVERGATE Address PERMITTED WORK: PLM96-02009 Plbg Permit No Statu Number of Fixtures: 25 Water Service - Feet: 0 Date Issued 23-AUG-96 Number of Branches: Sanitary Sewer - Feet: Issued By : SB 0 Date Updated 23-AUG-96 Updated By : SB Solar Units 0 Storm Sewer - Feet: Ω Permittee DETEMPLE COMPANY INC In-Kind Water Htr : Rain Drains 0 - Feet: Permittee Phone: 503 227-2641 FIXTURES: OREGON STEEL MILL LAB Customer Water Closets Kitchen Sinks Area Drains Description Catch Basins MOLD SHOP Urinals Dishwashers Wash Basins Garb. Disposal: Drywells Butch - 286-9657 Bathtubs Drink Fountain: Soak Trench 2-Comp Sinks Showers Interceptor Bidets 3-Comp Sinks X 2330 Notes Sewer Caps Water Heaters Hand Sinks Conn. Sewer Clothes Washers: Floor Sinks Conn. Storm Laundry-Trays Bar Sinks <u>2</u> Rain Drains Work Location Serv/Mop Sinks :_ Hub Drains Bck Wtr Valve Floor Drains :5 Backflow Prvtr: 2 Reversal . in 193 Building Use COM Sewer Connect: N Remarks Building Work REM Building Owner : OREGON STEEL MILLS INC 新花田 白田 二 NSPECTION HISTORY : 3-4-97 Top out upp MAS Check Double Check Verlige- af Firel, Mills 5-23-97 Violations 67 NOT χ., -5-98 Vinter Final Inspection: Date:



		PLUMBING INSPECTION REQUEST FORM	} ;		-	Report: PLMII	NSP.REP
	Address	: 14400 N RIVERGATE BLVD			<i>.</i>		
	Plbg Permit No	: PLM97-01526 Status : P		م.»	PERMITTED WOR	<u>K:</u>	
-	Date Issued Date Updated Permittee Permittee Phone	: 18-JUN-97 Issued By : GLG : 18-JUN-97 Updated By : GLG : TRIAD MECHANICAL INC : 503 289-9000	Number of Number of Solar Unit In-Kind Wa Number of	Branches: s : ter Htr :	0 Sanita 0 Storm	Service - Feet: ary Sewer - Feet: Sewer - Feet: Drains - Feet:	34 312 462 0
	Customer	OREGON STEEL MILL	}		FIXTURES:		-
	Description Notes Work Location	NEW CONSTRUCTION	Water Clos Urinals Wash Basin Bathtubs Showers Bidets Water Heat Clothes Wa Laundry Tr Serv/Mop S Floor Drai	s : ers : shers : inks :	Kitchen Sinks Dishwashers Garb. Disposal Drink Fountain 2 ₁ -Comp Sinks Hand Sinks Floor Sinks Bar Sinks Hub Drains Backflow Prvtr	Catch Basins Drywells Soak Trench Interceptor Conn. Sewer Caps Conn. Storm Rain Drains Bck Wtr Valve	
-	Building Use Building Work Building Owner	COM Sewer Connect: N NEW OREGON STEEL MILLS INC	Remarks		· · · · · · · · · · · · · · · · · · ·		:
, Spradeni i	an a	INSPECTION HISTORY	24 41	ş İ			
	·	17. • · · · · · · · · · · · · · · · · · · ·		1	· .		
	009	D/2-6-20-22 MAD			. •	-	
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	Connection Metal Di	JE at Catch BHSIN - A DOVE 12(1.					
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	Final Inspection	1: 626.97 MAD Date:		3			

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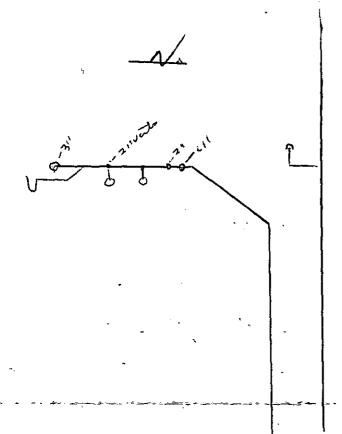
PLUMBING INSPECTION REQUEST FORM	Report: PLMINSP, REP
Address : 14400 N RIVERGATE BLVD	
Address : 14400 N RIVERGATE BUVD	PERMITTED WORK:
Plbg Permit No : PLM97-01735 Status : P	Number of Distances 1 Nation Commission Roots
Date Issued : 07-JUL-97 Issued By : SB	Number of Fixtures:1Water Service - Feet:0Number of Branches:0Sanitary Sewer - Feet:100
Date Updated : 07-JUL-97 Updated By : SB	Solar Units : 0 Storm Sewer - Feet: 100
Permittee : LANCE CONSTRUCTION & ENGINEERI Permittee Phone: 503 649-0906	In-Kind Water Htr : 0 Rain Drains - Feet: 0
Customer : OSM SANGARY	FIXTURES:
Description : REPLACING SINK & STORM SEWER	Water Closets : Kitchen Sinks : Area Drains :
	Urinals : Dishwashers : Catch Basins : Wash Basins : Garb. Disposal: Drywells :
	Bathtubs : Drink Fountain: Soak Trench :
Notes	Showers : 2-Comp Sinks : Interceptor :
	Bidets : 3-Comp Sinks : Sewer Caps : Water Heaters : Hand Sinks : Conn. Sewer :
	Clothes Washers: Floor Sinks : Conn. Storm :
Work Location :	Laundry Trays : Bar Sinks : Rain Drains : Serv/Mop Sinks : Hub Drains : Bck Wtr Valve:
	Floor Drains : Backflow Prvtr: Reversal :
Building Use : COM Sewer Connect: N	Remarks :
Building Use : COM Sewer Connect: N Building Work : REP	
Building Owner : OREGON STEEL MILLS INC	
INSPECTION HISTORY:	
TO 2-97 40 STATE - MAL	MAINHainens Shop Breakkeron
7-23-97 40 Sandang & the in MAA	
7-24-97 not Ready MB	
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Final Inspection: MHS	

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14400 N RIVERGATE BLVD	00-152115-000-00-PT	Plumbing Permit
Commercial/Multifamily/Repair-Remodel OREGON STEEL MILL	Recd: 06/05/00 Issued: 06/05/00	Water Closets Kitchen Sinks Area Drains Urinals Dishwashers Catch Basins
19 FIXTURES R649774291 Lot/Blk2 MACH & EQUIP NEW PLAT- Addition PARTITION PLAT 1997-108 Lot/Blk1/Legal LOT 1	2N1W26 00800 A1 1997	Wash Basins Garb. Disposals Drywells Bathtubs Drink Fountains Soak Trench Showers 2-Comp Sinks Interceptor Bidets 3-Comp Sinks Sewer Caps Water Heaters Hand Sinks Conn. Sewer Clothes Washers Floor Sinks Conn. Storm Laundry Trays Bar Sinks Rain Drains Serv/Mop Sinks Hub Drains Bck Wtr Valve
<u>Applicant</u> MACDONALD-MILLER OF OREGON - P02125	Owner INTERNATIONAL MILLS SERV CO 1155 BUSINESS CENTER DR #20 HORSHAM, PA 19044-3454	HBBradley
Trust Account Applicant MACDONALD-MILLER OF OREGON - P02125	all	Bldg permit. tithe Plan Review ore Bldg permit. tithe to Lim of Mc donald Miller. MHD: T.O. 9/2//au App 7 Shiy Jenal partical app 11-29-00
Project Details: # of Fixtures Commercial?	19 Yes	uite inquit brockey was up sent that is an ba
		1-19-01 first plumber app Torret & Dill
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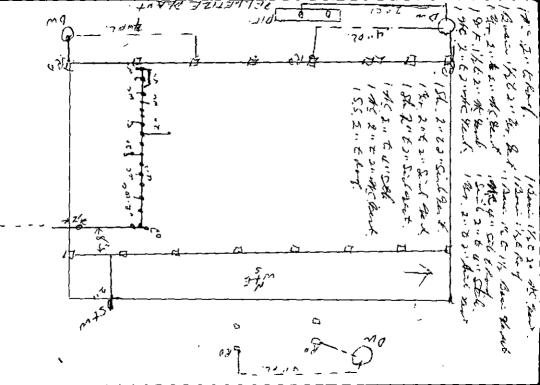
Commercial/Multifamily/Repair-Remodel	Recd: 06/27/00	······		
OREGON STEEL MILL	Issued: 06/27/00	Water Closets	Kitchen Sinks	Area Drains
	135ded. 00/21/00	Urinals	Dishwashers	Catch Basins
WATER/SAN/STRM/RDRAIN		Wash Basins	Garb. Disposals	Drywells
R649774291	2N1W26 00800 A1	Bathtubs	Drink Fountains	Drywells Soak Trench Interceptor
Lot/Bik2 MACH & EQUIP NEW PLAT	1997	Showers Bidets	2-Comp Sinks 3-Comp Sinks	Interceptor Sewer Caps
Addition PARTITION PLAT 1997-108		Water Heaters	Hand Sinks	Sewer Caps Conn. Sewer Conn. Storm
Lot/Bik1/Legal LOT 1		Clothes Washers		Conn. Storm
Applicant	Contractor - Plumbing	Laundry Trays	Bar Sinks	Rain Drains
EAGLE PLUMBING ENTERPRISES INC	EAGLE PLUMBING ENTERPRISES INC	Serv/Mop Sinks	Hub Drains	Bck Wtr Valve
13801 S FORSYTHE RD	13801 S FORSYTHE RD	Floor Drains	Backflow Prvntr	Reversal
OREGON CITY, OR 970451219	OREGON CITY, OR 97045	· ·		
Work 6508703	Work 7605565	10000	1111 1 11 11-4	
		6.2800	1 Copper Wall	> fenne to
Contractor/Builder	Owner	_ alust Stre	un "	
EAGLE PLUMBING ENTERPRISES INC	INTERNATIONAL MILLS SERV CO	11-08-00	STAIN & R. R.	ofst side Flui
13801 S FORSYTHE RD	1155 BUSINESS CENTER DR #20			
OREGON CITY, OR 970451219	HORSHAM, PA 19044-3454	11-13-00 3		townsports & 2 C/c
Work 6508703		APP WEST	Side PAITICI	g/ cover TO 67
		down Sport	- A. Sur	
Project Details:		11-17-00		GUNSPOUT Aroond
Water service # of feet	1024			
Sanitary Sewer # of feet	344	No: end of	1 building To	o far east side
Storm sewer # of feet	1446	App 7	Sill	
Rain drain # of feet		11-20-00 +	100 TrANSformer	PAG TO N.E. CORN
# Engineered storm water detention tanks	1			
New Exterior Installation?	Yes	\sim	U	ait of catal pasin
Commercial?	Yes	INAL MAP	Flain	
17-7 and - 124 Strom all	an To I TI Station	ι · · ·	<u> </u>	
-7-3-00-12" Storm poly TO. MAN Hole A+ Ruit-T.	pipe. them Liff Stevier			
10. MAN (RIE AT FOUT - T	ach - NO Connection	· · · · · · · · · · · · · · · · · · ·		
121. Force MAIN - From hift	Station to LIVE TOP	•	<u>ICINI-II-</u>	<u> </u>
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wooned in Steel CASING	mits.	1		
and Traiter-	Neather Buch Emstruction	·		
PLANIN - D'	MALS. North of Burgh construction	۱ <u> </u>		
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- 1 - 2 K Contr	ar 100 PSI (ESI CK	·		
all Eagle MARCE - 10	- PSE 1037 Sch to 1			
1" CRAvito lon a set	40 to VC Smitting Sewer			
T warren of marine and	Tratol			· · · ·
	Test OC			
Connection of 14" To E Langemen II of 2" Pre 55' H 5000 II of 12" 0.2 Philosophic II of 12" 0.2 Philosophic Visco	acura Server OK			
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Plumbing Records for

JR Simplot

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	MULTNOMAH COUNTY, OREGON DEPARTMENT OF MEDICAL SERVICES - PUBLIC HEALTH DIVISION REPORT OF PLUMBING INSPECTION						
			DateJ	uly á	23. 196	8	
Address	14003 N	Riverga te					
LotBlk	Add'n			1		R	
Master Plumber_	Copenha	gen_Inc					
OwnerCe	ollier Ca	rbon & Chemica	la				
		New, one story,		& in	dustria	1	
Water Closets		Hot Water Tank	1	Cess	looć		
		Fountain					
Bath Tub		Air Conditioner		_Dry V	Vell3	, 	
Basins	4	Urinals	2	Wate	r Service	1	
Auto. Dishwasher	·	Sink, Bar		Conn	ect to Sew	er1	
Sink, Ordinary	1	Sink, Service	1	_Cess	bool, Septic	Tank	
Disposal		Sewer Ejectors		_Launo	dry Tray		
Refrigerators		Auto. Clothes Washe	r	Denta	al Chairs		
Drain Floor	5	Catch Basins	· <u> </u>	Drain	Area		
Development Tan	k	Rain Drains6	ا 	Othe	r Fixtures_	2 sump pumps	
Remarks			<u> </u>				
Date of First Inspe	تection	3- 20-69 Dat	te of Final In:	spectio	n	-2-68	
Inspector	Clarola	A Bark Ins	pector	aro	CR. 7.	Bork.	
PHAI							



MULTNOMAH COUNTY, OREGON DEPARTMENT OF MEDICAL SERVICES - PUBLIC HEALTH DIVISION REPORT OF PLUMBING INSPECTION 12006

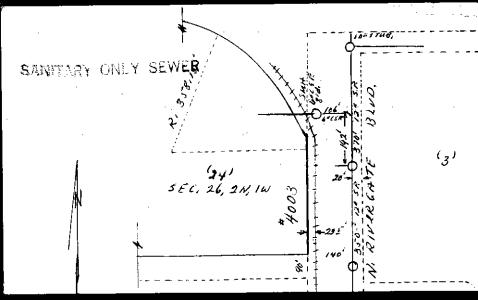
		Date <u>12-26-68</u>
Address	14003 N Rivergate	Permit NoFile No
LotBlk	Add'n	R
Master Plumber	Grinnell Co	
Owner	Collier Carbón	
Stories & Class of B	uilding	
Water Closets	Hot Water Tank	Cesspool
Bath, Shower	Fountain	Septic Tank
Bath Tub	Air Conditioner	Dry Weil
Basins	Urinals	Water Service
Auto. Dishwasher_	\$ink, Bar	Connect to Sewer
Sink, Ordinary	Sink, Service	Cesspool, Septic Tank
Disposal	Sewer Ejectors	Laundry Tray
Refrigerators	Auto. Clothes Wa	sherDental Chairs
Drain Floor	Catch Basins	Drain Area
Development Tank_	Rain Drains	Other Fixtures spinkler hds 81
Remarks		
Date of First Inspec	ion	Date of Final Inspection 7-2-67
Inspector		Inspector_ plante A.Bonh.

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4 9 Form w 271-1 (2-68)	CITY OF PORTLAND, GESON DEPARTMENT OF PUBLIC WORKS	Pmt.	No.	87	1.32	
	BUREAU OF DESIGN Sewer Branch	Date	Ap	ril	28,	1969

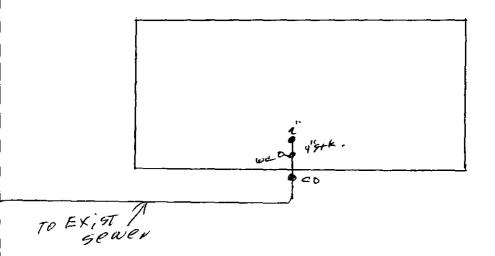
Location	<u>14003 N. Rivergate Blvd.</u>
Between	
Addition	Tax Lot 24, Sec. 25, 2N, 1W.
Applicant	Collier Carbon & Waiver No Yes #
Remarks	Chemical Corp.
	6" CSP to sampling MH 192' north of MH #22.
<u> 8' d</u>	eep at SMH 8.25 deep at connection to wye, at
	sewer.

Inspected	6-6-	-69	19	By Grossi	·
Book	9	Page	149	New	Repair

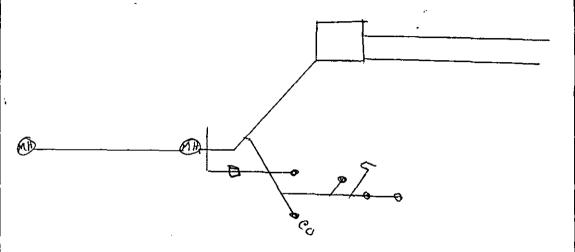


MULTNOMAH COUNTY DIVISION OF PUBLIC HEALTH 20568 REPORT OF PLUMBING INSPECTION

		Date	August 4, 1972
Address 14003 N. Riverg			NoFile No
LotBlkAdd'n			R
Master Plumber Dean Warre	n Plumbing Co.		
Owner Union Collier Co	•		
Stories & Class of BuildingNet	W		
Water Closets	Hot Water Tank	1	Cesspool
Bath, Shower	_Fountain	····-	Septic Tank
Bath Tub	_Air Conditioner		Dry Well
Basins1	_Urinals		Water Service
Auto. Dishwasher	_Sink, Bar		Connect to Sewer
Sink, Ordinary	_Sink, Service		Cesspool, Septic Tank
			Laundry Tray
Refrigerators	_Auto. Clothes Washer_	_,	Dental Chairs
Drain Floor	_Catch Basins		Drain Area
Development Tank	Rain Drains	· · · · · · · · · · · · · · · · · · ·	Other Fixtures
Remarks			
Date of First Inspection 8-3	Date	of Final	Inspection 4-25-73
Inspector factor Be	2nue Inspe	ctor	Jack Carnet
PHA I		ĺ	



	MULTNOMAH COUNTY	· <u> </u>
DEPARTMENT C	F ENVIRONMENTAL SERVICES	PERMIT SECTION
RE	PORT OF PLUMBING INSPECT	TION 28735
	Date2	/25/77
		File No
LotBlkAdd'n		TR
Master PlumberHarder	Mech. Contr., Inc	
Owner_ Union-Collie		
		_Cesspool
Bath, Shower	_Fountain	_Septic Tank
		_Dry Well
Basins1	_Urinals1	_Water Service1
	_Sink, Bar	
Sink, Ordinary	_Sink, Service	_Cesspool, Septic Tank
Disposal	Sewer Ejectors	Laundry Tray
Refrigerators	Auto. Clothes Washer	_Dental Chairs
Drain Floor1	_Catch Basins	Drain Area
Development Tank	_Rain Drains	_Other Fixtures
Remarks		man hole 1
Date of First Inspection2-	24-77 Date of Final Ins	pection
Inspector/	D. JInspector	

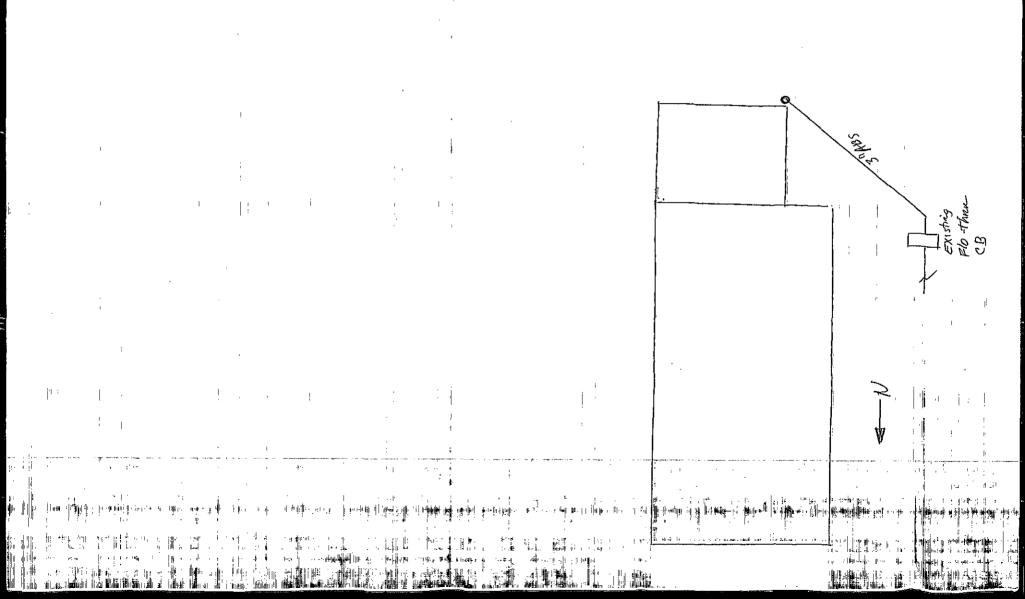


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LOCATION: 14003 N RIVERGATE BLVD PERMIT NUMBER:PLM94-01777

23-FEB-94 CUSTOMER:300050	
APPLICANT: TYPE OF WORK: REP USE: COM	LIVING UNITS:000
DJ MARTSOLF CONST	
PERMITED WORK:	
	-
LENGTH OF STORM :0LENGTH OF RAIN DRAIN:LENGTH OF WATER :00	30
CONTRACTOR: DJ MARTSOLF CONST PHONE:503 472-4891	
Notes Updated By	
ACTION Hold Date1 Date2 Date3	
APPLICATION RECEIVED F 23-FEB-94 23-	-FEB-94 SB
FIXTURES WATER CLOSETS SHOWER BATHTUB BASINS C	OTHER
SINKS DISPOSAL LAUNDRY TRAY URINALS FL	OOR DRAINS
2-28-94	· · · · · · · · · · · · · · · · · · ·
1 (NICC- 10	
Final Ven Haugen	

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1-FELCO BOS-Y-1" DC-FOU HOSE BIDD - LOCATE IN COMMETSOR LOOM OF MALOT, BLDG LOCATION: 14003 N RIVERGATE BLVD SER#179232 1- EHERGE EVERASH N/E SIDE OF SULAHUER ACID PERMIT NUMBER: PLM94-04729 UNICAL CUSTOMER: 10 FIXTURES 05-MAY-94 1- FEBCO 305-Y-1"- SAME LOCATION AS ADDLE TAUKS TYPE OF WORK: REM USE: COM LIVING UNITS:000 SER# AJ 3142 I- EMELG EVENASH LOCATED WITH IN APPLICANT: CONTAINMENT WALLS OF SULPHURICACID **MCDOWELL WELDING & PIPEFITTING** TANKS **PERMITED WORK:** 1- FERCO 805-Y DC-1"- LOCATED AT RAILADAD TANTCAR KOADUG STATION 568# AH 9163 NO. OF FIXTURES: 10-16 ADDT'L FLOORS: I- EMERIC ETERIASH ON PLATFORM AT ABOVE AUCATION NO. OF BRANCHES: 0 **REP. WATER HEATER: 0** SOLAR UNITS: MOBILE HOME SERVICE: 1- FEACO 805-1-DC-1"- SER # A189190 ROCATED AN GROOND AT DOCK BUT ALLOS CONTRACTOR: MCDOWELL WELDING & PIPEFITTING PHONE:241-2410 OUND TO MOVIDE HEAT THEY Updated -By Notes INSULATION FOR FREEZE ROTECTION ON RP 8-4-94 ACTION FIRED THOM Hold Date1 Date2 Date3 05-MAY-94 SB 7-22-94 PERMIT NOT SECURED YETFOR APPLICATION RECEIVED 05-MAY-94 F GADDITIONAL FIXTURES 8-4-94 FIRAL APPONED THEAN مرجد والانتصاب م FIXTURES WATER CLOSETS SHOWER BATHTUB BASING OTHER DISPOSAL LAUNDRY TRAY URINALS FLOOR DRAINS SINKS UREA CAGENIE BLDG W/E CORVER - FEBCO BOS-Y DC -1"- SER # 9261 UNER SOLUTION TAUK-LORTH SIDE - "" " SOL HALL 9461 1- EXE WASH IN PUMP 400 AREA - NETWEEN LARGE AMMONIA STORAGE TALKS 1- FEBCO 305-Y-1"- SERTAH 9128- NUMP 400 AREA BETWEEN STORAGE TANKS 1- EVEWASH IN PUMP ISOACEA SOUTH OF AMMONIATALK 1-FEDCO 805-Y-1" - SEDIE ANGIDO VERT TO ETEWASH MOVE 1-FEBCO 325 V-AP-11/2 JENE U \$403-LEDCATED FLONNOWTHEND OF MAILTERALCE SHOP TO SUPERIOUTRED OPENTIDE 1-EMERCENCIET WASA-SAVIELOCATION AS RPABONES 1-EVALASSA LO- LUDNOM DE LABORDE ESPERIOSH

LOCATION: 14003 N RIVERGATE BLVD PERMIT NUMBER:PLM94-12676

21-NOV-94 CUSTOMER: OUTSIDE PLB CONSTRUCTION TRAL USE: COM

101

DESCRIPTION/LOCATION:

TYPE OF WORK:NEW USE:COM LIVING UNITS:000

APPLICANT: MCDOWELL WELDING & PIPEFITTING 241-2410

PERMITED WORK:

LENGTH OF STORM : 0 LENGTH OF WATER : 50 LENGTH OF SAN SEWER: 35

CONTRACTOR: MCDOWELL WELDING & PIPEFITTING PHONE:241-2410

Notes Fried-11-23-24 MAA

ACTION Hold Date1 Date2 Date3 APPLICATION RECEIVED F 21-NOV-94 SB

FIXTURES WATER CLOSETS SHOWER BATHTUB BASINS OTHER SINKS DISPOSAL LAUNDRY TRAY URINALS FLOOR DRAINS FINAL APPROVAL INSPECTOR DATE:

CONNECTION FINAL: _____ INSPECTOR: _____ DATE: _____

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11.-23.94 TEMP TRAILER. 3" Wheter - 3/2 water

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	0255 04-051488-000-00-PT	Plumbing Permit		IVR #: 239025
Commercial/Multifamily/Addition/Alter IR SIMPLOT BACK FLOW PREVENTER	tion/Replacement Recd: 09/30/04 Issued: 09/30/04	Water Closets	Kitchen Sinks Dishwashers Garb. Disposals	Area Drains Catch Basins Drywells
R971260240 Addition SECTION 26 2N 1W Lot/Bik1/Legal TL 1000 21.76 ACRE	E 2N1W26C 01000	Bathtubs Showers Bidets Water Heaters	Drink Fountains 2-Comp Sinks 3-Comp Sinks Hand Sinks	Soak Trench Interceptor Sewer Caps Conn. Sewer
Applicant AMERICAN PLUMBING SERVICES LP 5905 N INTERSTATE AVE PORTLAND OR 97217 Work (503) 289-649 Fax (503) 247-242		Clothes Washers	Floor Sinks Bar Sinks Hub Drains Backflow Prvntr	Drywells Soak Trench Interceptor Sewer Caps Conn. Sewer Conn. Storm Rain Drains Bck Wtr Valve Reversal
Contractor - PlumbingAMERICAN PLUMBING SERVICES LP5905 N INTERSTATE AVEPORTLAND OR 97217Work(503) 289-649Fax(503) 247-242			5 Boche (160	
Project Details: Occupancy Group - PT Backflow Preventer Total Fees Paid	Commercial/Industrial 1 \$62.64	· · · · · · · · · · · · · · · · · · ·		

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Plumbing Records for

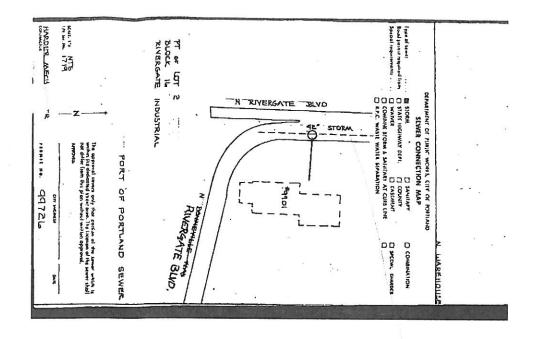
SPC Properties

9901 and 10001 North Rivergate Blvd

NIB	4 SEC 1719 CITY OF PORTLAND, OREGON DEPARTMENT OF PUBLIC WORKS PML No. 99726
	Rivergate Blvd
Location	9901 N Benneville -Way
Between	
Addition	Rivergate Industrial Lot pt, 2 Blk. 16
Applicant	Harder Mech. Waiver No 🛛 Yes 🗆 #
Remarks	Connected to Bort of Bortland storm sewer.
•	The state of the second
	Not city maintained.
nspected	9-29-78 19 By Brooks
Book NI	B Page New XXXX Repair

19901 N Rivergali Bla

Partof Steinfelds/ Tree House Foods.



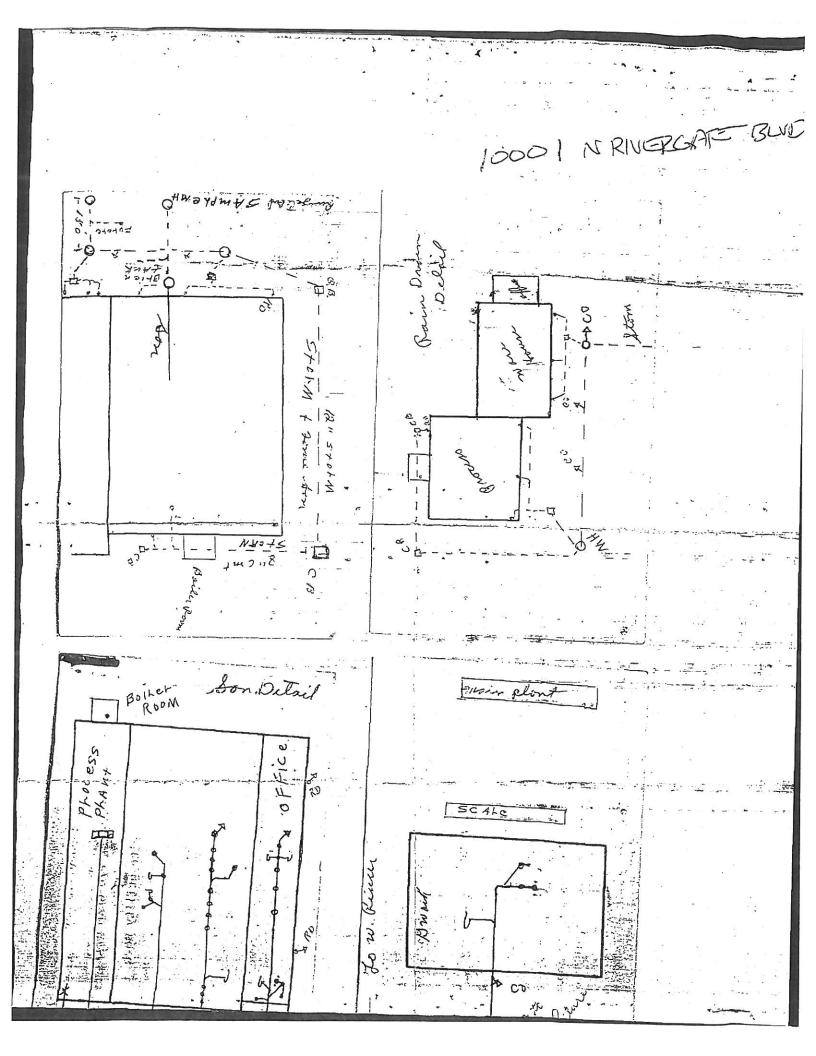
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BE	BUREAU OF BUILDINGS
1 · · ·	<u>2 10001 N Rivergate</u> <u>2 10001 N Rivergate</u> <u>2 10001 N Rivergate</u> <u>2 10001 N Rivergate</u>
Owner	Steinfield Processing Plant
Contractor 2	Dean Warren Plbg.
	of Building Commercial
	Hot Water Tank Conn_Cerspool
Shower	Auto Cl. WasherA A Sachage Treach
Bathtub	Auto Cl. WasherA Stepage Treach
Basins	Service Sinks Conn. Sewer 275 \$86 8"
	Urinals Conn. Storm 3731 \$113 12"
	Fountains Sewer Cap
Laundry Tray	Floor Drain Catch Basin * 2
Heat Pump	Area Drain Heat Exchanger
Water Service	Rain Drains Solar Panel
Remarks <u>8¹¹</u> i	ndirect waste; *connect 2 C.B.
Date of Cover Insp	action Date of Final Inspection
	Inspector Inspector
DATE	REMARKS
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7-1-88	8" Sanitany OK Pym
7-18-88	12" PUC Sever
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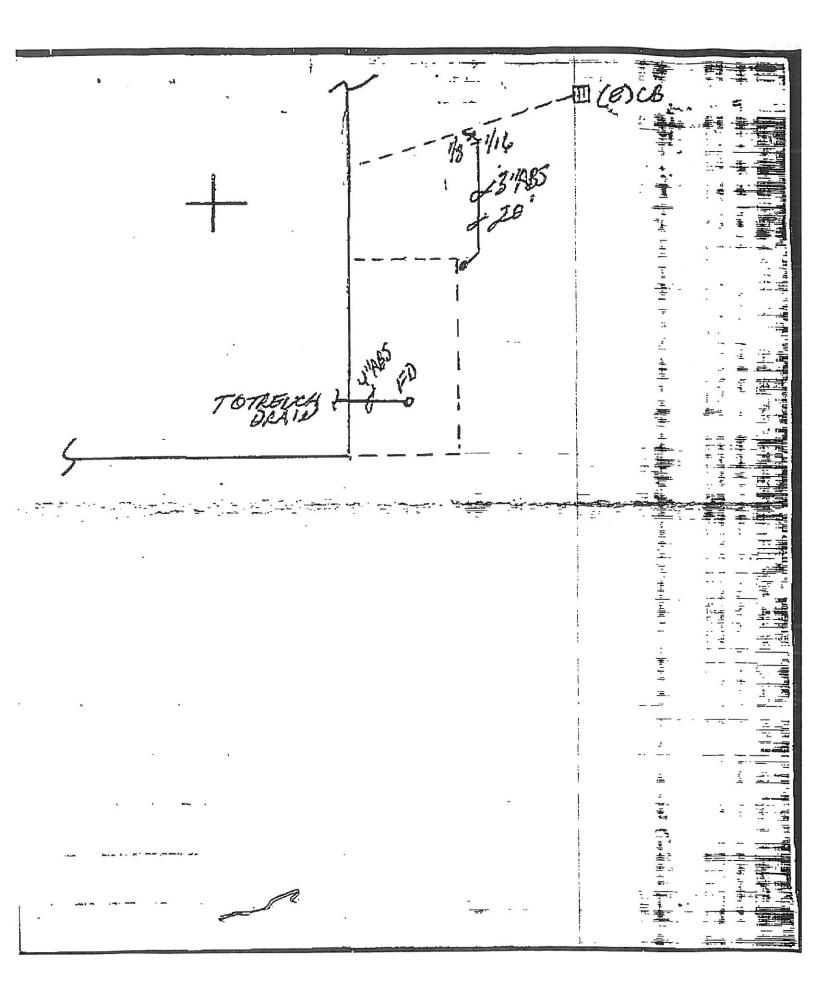
BUREAU OF BUILDINGS REPORT OF PLUMBING INSPECTION Date _7/6/89 10001 N Rivergate Address 25 ___ Permit _____93144 Steinfeld's < ŵwner ____ Contractor Rowland Plbq. Commercial Stories and Class of Building Water Closets ______ Hot Water Tank _____ Seepage Trench ____ Shower _____ Auto Cl. Washer Bathtub ______ Auto Dishwasher _____ Dry Wells ___ Basins _____ Service Sinks _____ Conn. Sewer 500 \$145 Kitchen Sink ______ Urinals _____ Conn. Storm _____ Disposal ______ Fountains ______ Sewer Cap _____ Laundry Tray _____ Floor Drain _____ Catch Basin _____ Heat Pump _____ Area Drain _____ Heat Exchanger _____ Water Service _____ Rain Drains _____ Solar Panel _____ Remarks _____ 7-10.51 Date of Final Inspection 17-15-Date of Cover Inspection Sinspector Inspector DATE REMARKS 8 PUC OK_ to Cover Bldg -89 Fence ling need C.O. Adapters & Covers S' PUL Fence West -10-84 A

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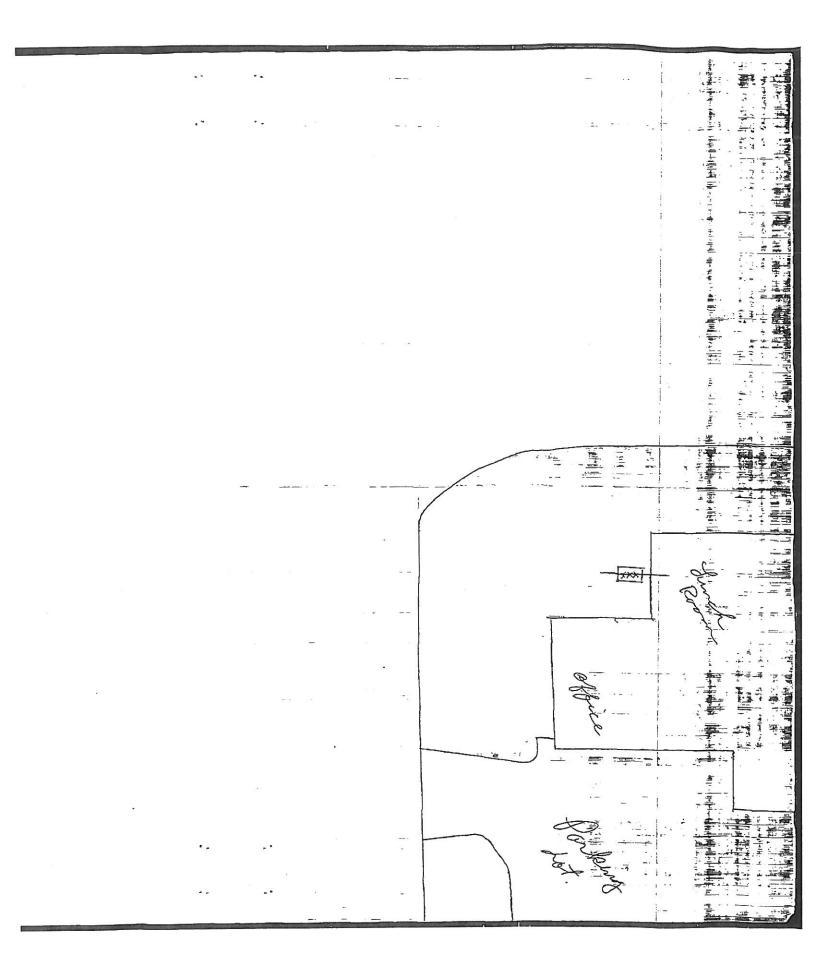
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RE	PORT OF PLUMBING INSPECTIO	N Date7/20/92	•
	DI N. RIVERGATE BLVD.	Permit_ 123352	
Owner STEIN	FRIS	and the second second second second second second second second second second second second second second second	
Contractor NOR			-
Stories and Class			
		Conn. Cesspool	
		Seepage Trench	
		Dry Wells	
		Conn. Sewer	
		Conn. Storm	
		Sewer Cap	
		Catch Basin	
		Heat Exchanger	
 Option - Option -		541Solar Panel	
	ection Date of	Final Inspection 7-27-8	
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	Inspector	Manuel Zinspect	tor .
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LOCATION: 10001 N RIVERGATE BLVD PERMIT NUMBER:PLM93-10521 20-DEC-93 CUSTOMER:IRRIGATION SYSTEM-STEINFELDS APPLICANT: TYPE OF WORK:NEW USE:IND	LANDSCAPE EAST INC PERMITED WORK: NO. OF FIXTURES: 1 NO. OF BRANCHES: 0 NO. OF BRANCHES: 0	NDSCAPE E/	Hold Date1 Date2 F 20-DEC-93	Supret 1" Juhro Brch Ho march 1" Juhro Brch Ho June 805 4 1 Seven and 805 4 1 Seven and 805 1	An Danyen See drawing by le

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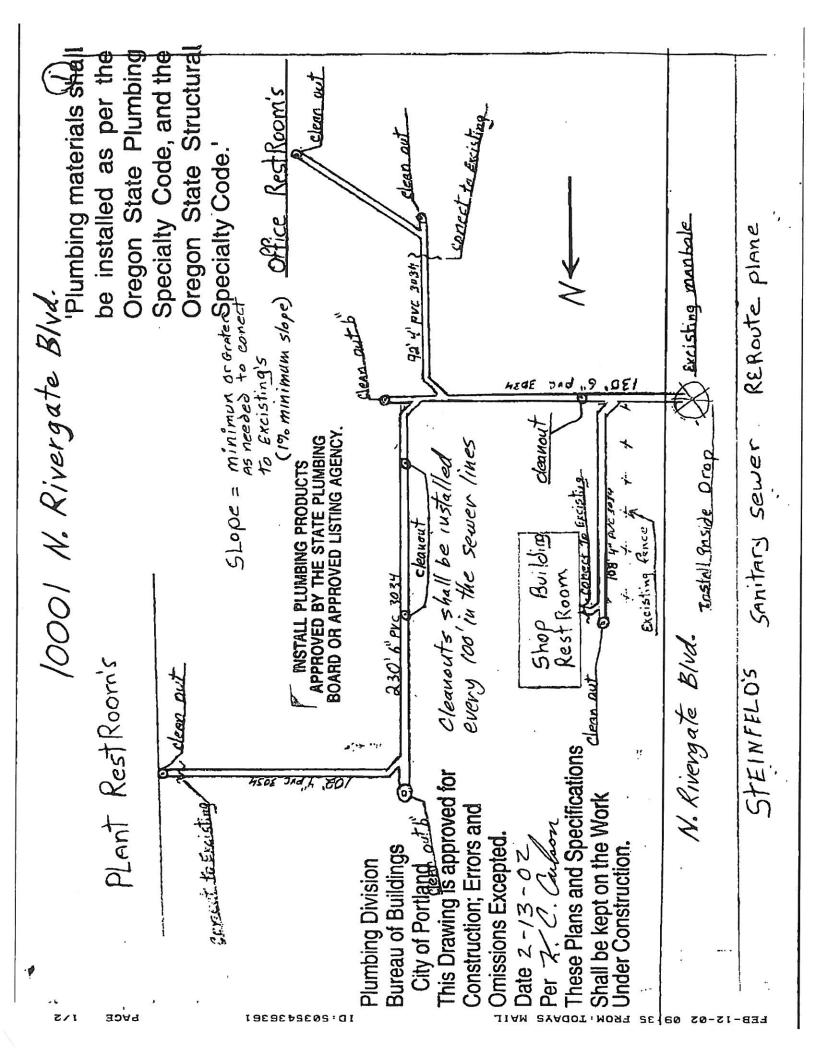
	PLUMBING INSPECTION REQUERT FORM		Renort DIMINGO
Address /	10001 N RIVERGATE BLVD	·/	
Plbg Permit No	PLM97-02528 Status : P		PERMITTED WORK:
Date Tssued Date Updated Permittee Permittee Phone	06-OCT-97 Issued BY : GLG 06-OCT-97 Updated BY : GLG INTERSTATE MECHANICAL INC 503 233-7171	Number of Fixtures: Number of Branches: Solar Units In-Kind Water Htr : Number of Floors :	1 Water Service - Feet: 0 0 Sanitary Sewer - Feet: 0 0 Storm Sewer - Feet: 0 0 Rain Drains - Feet: 0 0
Customer	STEINGELD'S		FIXTURES:
Description	INSTALL NEW 4 INCHE DOUBLE CHECK BACKFLOW D EVICE	Water Closet's : Urinals Wash Basins :	an Sinks :
Notes		Bathtubs Showers Bidets Water Hearers	Drink Fountain: Soak Trench : 2-Comp Sinks : Interceptor : 3-Comp Sinks : Sewer Caps : Hand Sinks : Comp Sinks
Work Location		y Tray	c Sinks : Conn. St Sinks : Rain Dra
		Floor Drains	Backflow Prvtr: Reversal :
Building Use / Building Work Building Owner	COM Sewer Connect: N ADD STEINFELD'S PRODUCTS CO	Remarks	
1.	· INSPECTION HISTORY		
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Final Inspection: /	MHS Date: N-897		

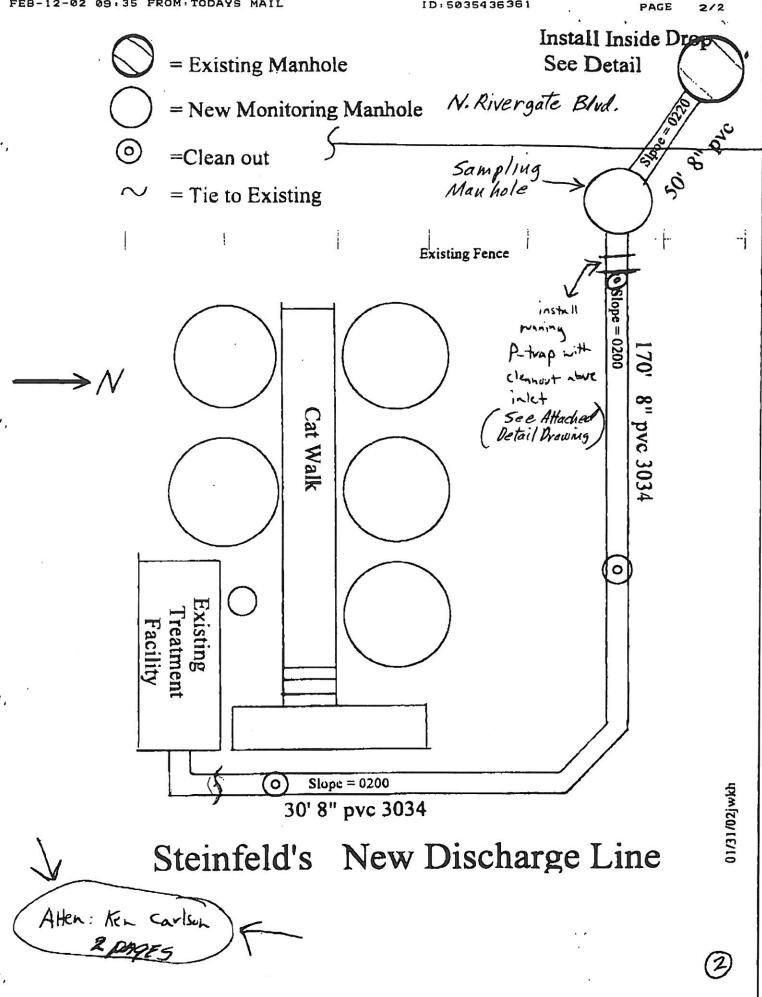
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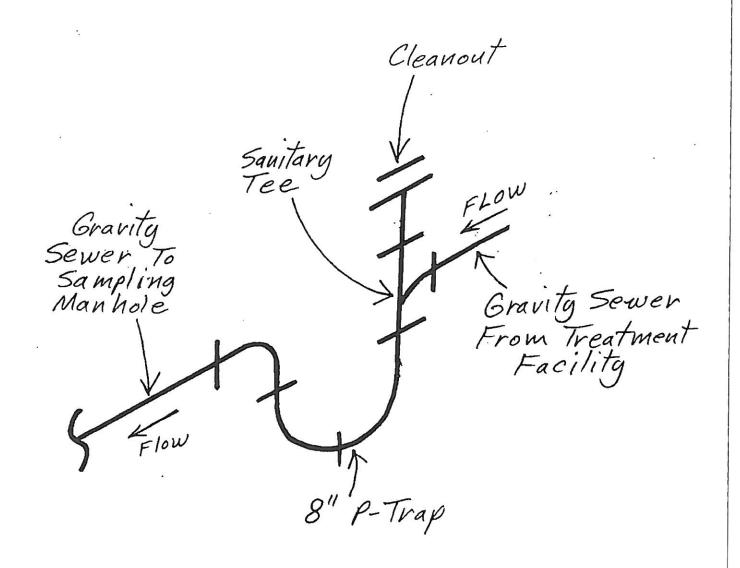
10001 N RIVERGATE BLVD	02-105037-000-00-P	Plumbing Permit IVR #: 2216325
Commercia/Multifamily/Addition/Alteration/Replace 10001 RIVERGATE BLVD REPIPE EXISTING SANITARY SEWER LINE	Keplace Recd: 02/01/02 Issued: 02/01/02 Issued: 02/01/02	Water Closets Kitchen Sinks Area Drains Urinals Dishwashers Catch Basins Wash Basins Garb Dismeets Downolis
R708883900 Addition RIVERGATE INDUSTRIAL DIS - LoVBIk1/Legal TL 200 LOT 2 BLOCK 16 LoVBIK2 LAND & IMPS SEE -3901	2N1W35 00200	Drink Fountains Drink Fountains 2-Comp Sinks 3-Comp Sinks Hand Sinks Floor Sinks
<u>Applicant</u> KESSI CUSTOM HOMES INC 34366 E COLUMBIA AVE SCAPPOOSE, OR 97056 Work 5035433818	Contractor/Builder KESSI CUSTOM HOMES INC 34366 E COLUMBIA AVE SCAPPOOSE, OR 97056 Work 5035433818	Bar Sinks Bar Sinks Hub Drains Backflow Prontr Day MC w/ S A w/
<u>OWNEr</u> SPC PROPERTIES LLC 10001 N RIVERGATE BLVD PORTLAND, OR 97203		4 CIMALING. F J live North S INSTALLED & INS,
Project Details: Occupancy Group - PT Sanilary Sewer # of Feet Total Fees Paid	Commercial/Industrial 865 \$702.24	Aunte aus

10001 N RIVERGATE BLVD	02-105043-000-00-UC	BES - Sewer Connection Plumb IVR #: 2216331
Commercial/New Connection 10001 RIVERGATE BLVD	Recd: 02/01/02 lssued: 02/01/02 0/S 1619	Juniel app 2-22-02
401' OF 15" CSP SANITARY SEWER LOCA CONTRACTOR TO INSTALL INSIDE DROP PREPARE 6" PVC BRANCH TO TO PROP P	401' OF 15" CSP SANITARY SEWER LOCATED IN N RIVERGATE BLVD. CONTRACTOR TO INSTALL INSIDE DROP CONNECTION PER STD DWG 4-27 AND PREPARE 6" PVC BRANCH TO TO PROP PER RULES OF CONNECTION. MH>15' DEE	Farment and Sh
R708883900	2N1W35 00200	
Addition RIVERGATE INDUSTRIAL DIS LoUBIK1/Legal TL 200 LOT 2 BLOCK 16 LoUBIK2 LAND & IMPS SEE -3901	<u>2</u>	
Applicant KESSI CUSTOM HOMES INC 34366 E COLUMBIA AVE SCAPPOOSE, OR 97056 Work 5035433818	Contractor/Builder KESSI CUSTOM HOMES INC 34366 E COLUMBIA AVE SCAPPOOSE, OR 97056 Work 5035433818	
<u>Owner</u> SPC PROPERTIES LLC 10001 N RIVERGATE BLVD PORTLAND, OR 97203		
<i>Project Details:</i> Connection In Right of Way? Connection Type Total Fees Paid	Yes Sanitary \$70.00	

10001 N RIVERGATE BLVD	02-105046-000-00-UC	BES - Sewer Connection Plumb IVR #: 2216334
Commercial/New Connection 10001 RIVFRGATE BLVD	Recd: 02/01/02	
401' OF 15" CSP IN N RIVEGATE, CONTRACTOR INSTALL INSIDE DROP TO UPSTREAM MH PER STD DWG 4-27-2 AND PREPARE 8" HDPE BRANCH TO PROPERTY.ALL JOINTS TO BE BUTT FUSED FROM SAMP. MH TO PUBLIC MH.	CTOR INSTALL INSIDE DROP TO PREPARE 8" HDPE BRANCH TO D FROM SAMP, MH TO PUBLIC MH.	fund and C- Root
R708883900	2N1W35 00200	
Addition RIVERGATE INDUSTRIAL DIS LoUBIK1/Legal TL 200 LOT 2 BLOCK 16 LoUBIK2 LAND & IMPS SEE -3901		
Applicant KESSI CUSTOM HOMES INC 34366 E COLUMBIA AVE SCAPPOOSE, OR 97056 Work 5035433818	Contractor/Builder KESSI CUSTOM HOMES INC 34366 E COLUMBIA AVE SCAPPOOSE, OR 97056 Work 5035433818	
<u>Owner</u> SPC PROPERTIES LLC 10001 N RIVERGATE BLVD PORTLAND, OR 97203		
Project Details: Connection in Right of Way? Contractor Taps Total Fees Paid Total Fees Paid	Yes Sanitary \$70.00	



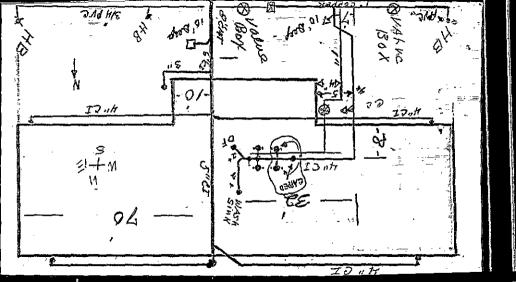




Plumbing Records for

9625 N Ramsey Blvd

U OF BUILDINGS REPORT OF PLUMEING INSPECTION Address_ Permit 🤄 Lot . Blk Add _ Owner ____ Contractor ____ Ideal Plumbing Stories and class of building <u>new one story</u> warehouse 4NHot-Water Tank _____ IN Cesspool _____ Water Closets has been as a second Bath, Shower _____ Auto. Cl. Washer _____ Conn. Cesspool _____ Bath Tub ______ Auto, Dishwasher _____ Dry Well _____ 4NBasins ____ Drain Floor _____ Conn. Drywell ____ Sinks ____ 1N Drain Area _____Conn. Sewer ____100 * _____ X'' Laundry Trays _____ Rain Drains _____6N__Storm Sewer Bldg, Pmt, _____ Water Ser.] " N _____ Catch-Basins Fountains IN (Roush only-2 WC+28 Ton Remarks _____ Date of First Inspection _____ Date of Final Inspection, how Inspector Inspector



CITY OF PORTLAND, OREGON DEPARTMENT OF PUBLIC WORKS

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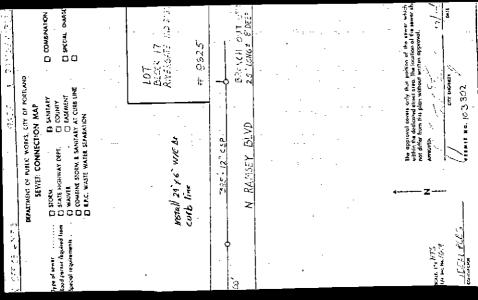
4 SEC 1619

103302 Pmt. No.

SEWER BRANCH

Date 1-7-82

Locatio	n	9625 N.	Ramse	v Blv	d.					
Betwee	n									
Additio	n Ri	vergate .	Ind, D	ist.		Lot			Bik.	17
		eal Plbg.			Wa	iver 1	Vo 🗆 Y	es 🗖	#	±,
Remark	cs	4" CIP	into	exist						н.
		in from	nt of	prope	rty	9 f	t deep	at c	onn	ection
	<u> </u>	<u>4" CIP</u>	to pr	opert	y 1:	Ine				
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Inspecte	d	12-31	1981	By	Ε.	Мапt	ifel:			
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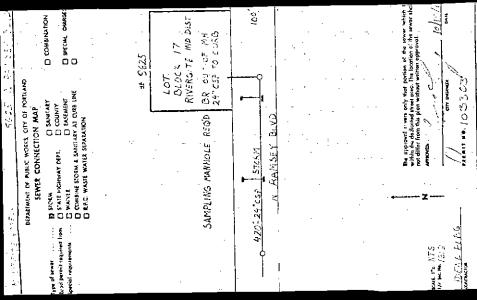
CITY OF PORTLAND, OREGON DEPARTMENT OF PUBLIC WORKS

Pmt. No. 103303

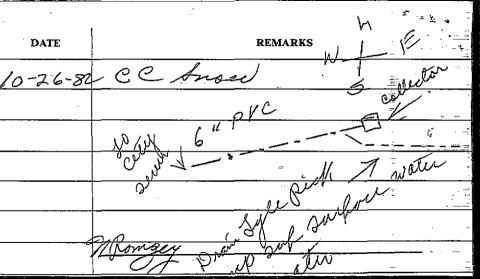
SEWER BRANCH

Date 1-21-82

Location	9625	Ν, Ι	Ramsey	Blvd,					
Between		-	¥	·					<u> </u>
Addition	Riverg	gate	Ind.	Dist.	Lot	- +	Bl	k. 17	7
Applicant	Idea1	P1bg	g.	W	aiver N	0 🗆	Yes 🗆 #		·
Remarks C	ontract	or t	tapped	exist:	ing 24	" CSI	storm?	line	from
M.H.	in N.Ra	msey	y in Ē	ront of	f prop	erty	for 8"	CSP	storm
drain	, 11½ f	t de	eep at	connec	tion.	Tap	made h	ehind	ΤσΓ
	This co	onneo	ction	and tap	o appr	oved	by W.K	orsak	ι <u>.</u>
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		_				F	or Reco	ord O	nly
Inspected	1-1	5	19 82	By E. Ma	ntife	L: N	o Inspe	ctio	n
Book NI	B P	age 1	NIB	New	XX		epair	ØK	<u> </u>
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R	EPORT OF PLUMBING IN	Section Permit <u>203398</u>
Address9625 N	<u>Kamsey Bivd</u>	Permit 20 3 3 9 8
Lot Blk	Add	
		<u></u>
Contactor <u>Total</u>	<u>Mechanical</u>	
Stories and Class of Building .	·	
Water Closets	Hot Water Tank	Conn. Cesspool
Shower	Auto Cl. Washer	Seepage Trench
Bathub	Auto Dishwasher	Dry Wells
Basins	Service Sinks	Conn. Sewer
Kitchen Sink	Urinals	Conn. Storm1N
Disposal	Fountains	Sewer Cap
Laundry Tray	Floor Drain	Catch basin <u>1N</u>
		Heat Exchanger
Water Service	Rain Drains	Solar Partel
Remarks		
Date of First Inspection	Date of I	Finithe prection D-2-8-82
······································	Inspector	Mouth Inspector

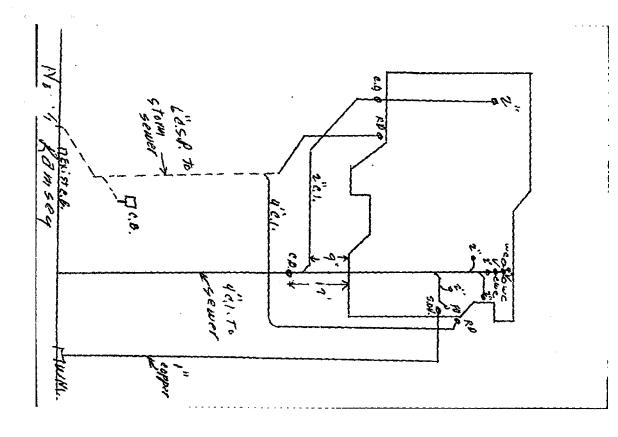


Plumbing Records for

9715 N Ramsey Blvd

9715 IV Kansey Eli

	MULTNOMAH	COUNTY		x
	OF ENVIRONMENTA	L SERVICES/	PERMIT SECTION	
(aga and a second	report of plumbin	Permit No.	33300	
Address 9715 N. Rams	ey St.	_ Date	6-6-79	
Lot Block	Add'n	T	R	
Owner <u>Rivergate</u> Fe	deral Credit	t Union		
moster Flumber	-Inc-	·····		
Stories & Class of Bunding				
Water Closets	_ Rain Drains	2	Connect to Sewar	1
Bath, Shower	_ Area Drain		Connect to Cessonal	
	- Fountain, Drinking		Water Service	1
	C MINTRY DOI		_ { (aller	
Sink, Ordinary	Sink Service		Other Fixtures	
Disposal	Urinals			
cauntury tray	Catch Basins	l		
Auto, Clothes Washer	Dry Wells			
Hot Water Tank	Swimming Pool			
Remarks				
Date of First Inspection $\frac{6-21}{2}$	- 79 Date	of Final thene	tion 12 - 3-	79
Inspector fact Bar	inspe	ctor	& Barro	50000
PHA1		0		

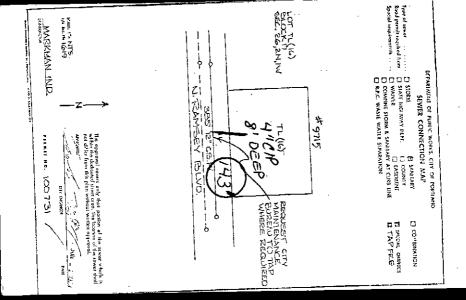


SB__NIB_ 14 SEC_1619

CITY OF PORTLAND, OREGON DEPARTMENT OF PUBLIC WORKS SEWER BRANCH

Pmt. No. 100731 Date 8-13-79

Location	<u>971</u> 5 N Ra	msev Bl	vd.		
Between					
Addition	Sec. 26,	2N, 1W	Lot	(16)	Blk.
Applicant				No 🖾 Yes 🗆	
Remarks	4" CIP	tap to	main sew	er 143' W.	of MH E.
<u>of pro</u>	<u>perty</u> 8' d	eep at S	Sewer. Ta	ap made by	plumber
direct	<u>ly on top</u>	of main	sewer OK	'd by Benn	v Miller
(sewer	repair).				
<u> </u>				ANKE UNE	à Store
Inspected	6-21-79	19 By		1	
Book NIB	Page		New XXXXX	K Repair	
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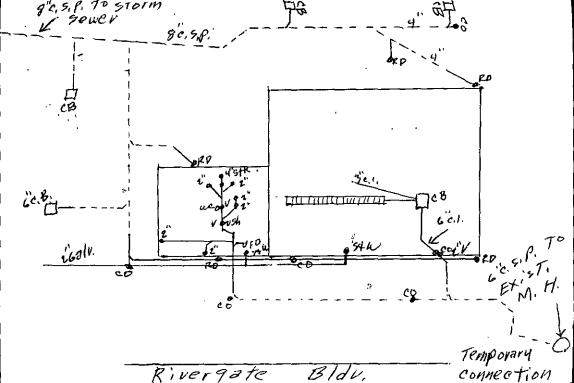


9715 N RAMSEY BLVD		02-110915-000-00-PT		Plumbing Permit		IVR #: 2222509	
Commercial/Multifamily/A	Addition/Alteration/R	eplace	Recd: 03/11/02			·	
RIVERGATE CREDIT UN	NON		Issued: 03/11/02	Water Closets	Kitchen Sinks	Area Drains	
REPLACE APPROX 70 F	FT WATER SERVIC	E E]	Urinals Wash Basins	Dishwashers	Catch Basins	
					Garb. Disposals Drink Fountains	Drywells Soak Trench Interceptor	
R708884300			2N1W26C 00200	Bathtubs Showers	2-Comp Sinks	Interceptor	
				Bidets	3-Comp Sinks	Sewer Caps	
				Water Heaters	Hand Sinks	Conn. Sewer	
Applicant		Contractor - Plumbing	· · · · · · · · · · · · · · · · · · ·	Clothes Washers	Floor Sinks	Sewer Caps Conn. Sewer Conn. Storm	
JACK HOWK PLUMBING &	& DRAIN SERVICE	JACK HOWK PLUMBING		Laundry Trays	Bar Sinks	Rain Drains	
PO BOX 2007				Serv/Mop Sinks	Hub Drains	Rain Drains	
GRESHAM, OR 97030				Floor Drains	Backflow Prvntr	Reversal	
Work	5032358784	Work	503	·			
		Home	503	Luir M	d /	21.0 - 2	
Contractor/Builder		<u>Owner</u>		W/S Ap,	1 & ferrad	3112-02	
JACK HOWK PLUMBING &	& DRAIN SERVICE	RIVERGATE FEDERAL C	REDIT UNION		/		
PO BOX 2007 GRESHAM, OR 97030		9715 N RAMSEY BLVD PORTLAND, OR 97203		A Su	il and a second s		
-	5032358784	FORTLAND, OR 57205			· · · ·		
				 ····			
Project Details:					(count	C. Sursi	
Occupancy Group - PT		Commercial/Industrial			<u> </u>	·	
Water Service # of Feet		70					
Total Fees Paid		\$90.44		······································			
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					N. RAME	sey Ka.	

Plumbing Records for

14025 N Rivergate Blvd

	AH COUNTY DIVISION	ON OF PUBLIC HEALTH G INSPECTION	17166
		Date April 22, 1971	
Address 14025 N Riverg	ate Blvd	Permit NoFile No	
LotBlkAdd'n			
Master PlumberDeTemp			
OwnerH_B_			
Stories & Class of Building	New, one	story, plant office	
Water Closets 3	_Hot Water Tank	Cesspool	
Bath, Shower			
Bath Tub			
Basins4	Urinals2	Water Service	1
Auto. Dishwasher	_Sink, Bar	Connect to Sewer_	2
Sink, Ordinary3	_Sink, Service	Cesspool, Septic Ta	ink
Disposal	_Sewer Ejectors	Laundry Tray	
Refrigerators	Auto. Clothes Washer	Dental Chairs	
Drain Floor3	_Catch Basins	7Drain Area	
Development Tank			
Remarks			
Date of First Inspection $3-1$	<u>デーフノ</u> Date	of Final Inspection 6 - 29	1-71-
Inspector Jack Ban	ntto_Insp	ector fach Barn	to
PHA 1		1	



1619 CITY OF PORTLAND, OREGON FORM W 271-1 DEPARTMENT OF PUBLIC WORKS Pmt. No. 90490 (2-68) Date 6-9-71

Location SANITARY ONLY SEWER 14025 N Rivergate Blvd. Between Addition Sec. 26 T2N R1W WM T Lot (26)Blk. Applicant DeTemple Co. Waiver No 🛛 Yes [] # Remarks Plbg. pulled out one length of 10" CSP with drag line then installed 10x8 CSP wye to existing branch with 2 lengths 10" CSP after Y,Y is 80' W of MS branch 126(3) N of MH in front of prop. 8' deep--partial insp. 6-7-71 sampling MH built 98' from MS 10' D // placed blue card no insp. of 6"bet MH & conn. of 10" Contractor didn't dig up turned over to Waste Water Management Inspected 9-27-71 19 By Brooks Book 🕔 Page /49 New Repair х 4.74 ITERED SEWER

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JANES L. APPENSON P.E., CETY ENGINEER Rep. Prof. Engn. No. 3544 - Nov. 1953	anty that		 	SATE E	A LAND	/0×8		SEPAR	🛛 SANIYARY WAY DEPT. 🔲 COUNTY	CONNECTION MAP
DATE	1/ 🗎 🧃		 · · · ·		ali 15"x 5" mye -		1	D CONNECTION FEE 13 Juit of City Bar 13 Sampling Mit	COMBINATION	

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Address

MULTNOMAH COUNTY DIVISION REPORT OF PLUMBIN	ON OF PUBLIC HEALTH	18863
	Date November 29,	1971
12025 N. Rivergate Blvd.	Permit No. File N	o .

		remin norne no
		TR
Master Plumber De Templ	<u>e Co.</u>	
Owner H. B. Fuller		
		r industrial plant & offices
Water Closets	Hot Water Tank	Cesspool
Bath, Shower	Fountain	Septic Tank
Bath Tub	Air Conditioner	Dry Well
		Water Service
Auto. Dishwasher	Sink, Bar	Connect to Sewer
Sink, Ordinaryl	Sink, Service	Cesspool, Septic Tank
Disposal	Sewer Ejectors	Laundry Tray
		sherDental Chairs
Drain Floor	Catch Basins	Drain Area
Development Tank	Rain Drains	Other Fixtures
Remarks SUK CO	unected	Other Fixtures TO EXIST. HUMbing
Date of First Inspection		Date of Final Inspection
Inspector		Date of Final Inspection
PHA I		0

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Form W-89 & (4-74)	UREAU OF BUILD	INSPECTION Date
Address <u>14025 N</u>	<u>Rivergate Blvd.</u>	Permit_0198059
Lot	Blk Add	
		an <u>a tatan na ana ana ana ana ana ana ana a</u>
		en en en en en en en en en en en en en e
Stories and class of I	building 01d 1-St	y Plant
Water Closets	Hot-Water Tank	Cesspool
,		Conn. Cesspool
Bath Tub	Auto. Dishwasher	Dry Well
Basins	Drain Floor	Conn. Drywell
		Conn. Sewer
		Storm Sewer
Bldg, Pmt,	Water Ser	Catch-Basins
Remarks 2" R.P	v. Valve-1	and the second and the second s
		$Q_{}Q_{\alpha}$
Date of First Inspec	tion Date of	Final Juspedian Jan 14-76
	Inspector	MACOUT Inspector

3# Dalu. Service - R.P. 85-416 735× In Factory office

REPORT	BUREAU OF BUILDINGS OF PLUMBING INSPECTION	Date <u>9-8-93</u>
Address	14025 <u>N</u> RIVERGATE H	3LVD Permit134544
Owner	H B FULLER	
Contractor	RESCUE R	OTER
		······································
Water Closets	Hot Water Tank	Conn. Cesspool
Shower	Auto Cl. Washer	Seepage Trench
Bathtub	Auto Dishwasher	Dry Wells
B ₂₂ sins	Service Sinks	Conn. Sewer
Kitchen Sink	Urinals	Conn. Storm
Disposal	Fountains	Sewer Cap
Laundry Tray	Floor Drain	Catch Basin
Heat Pump	Area Drain	Heat Exchanger
Water Service	Rain Drains	Solar Panel
Remarks	<u>1 manhole 10' \$43</u>	
Date of Cover Inspection _	Da <u>te</u> of	Final Inspection
	Inspector	Inspector

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14025 N RIVERGATE BLVD	00-140577 <i>-</i> 000-00-PT	Plumbing Permit
Commercial/Multifamily/New Construction BLDG PERMIT # 00-139429 CO 20 FIXTURES FOR NEW ADDITION WITH PERMIT # 00-139429 CO R971260030	Recd: 03/20/00 Issued: 03/20/00 2 RESTROOMS TO EXISTING BLDG - BLD 2N1W26C 1300	Water Closets 2 Kitchen Sinks Area Drains Urinals 2 Dishwashers Catch Basins Wash Basins 3 Garb. Disposals Drywells Bathtubs Drink Fountains Soak Trench Showers 2-Comp Sinks Interceptor
Addition SECTION 26 2 N 1 W Lot/Bik1/Legal TL 1300 0.45 ACRES		Wash Basins 3 Garb. Disposals Drywells Bathtubs Drink Fountains Soak Trench Showers 2-Comp Sinks Interceptor Bidets 3-Comp Sinks Sewer Caps Water Heaters / Hand Sinks Conn. Sewer Clothes Washers Floor Sinks Conn. Storm
<u>Applicant</u> POWER PLUMBING - P02805	Contractor - PlumbingPOWER PLUMBINGPO BOX 23144PORTLAND, OR 97281Work2441900	Laundry Trays Bar Sinks Rain Drains Serv/Mop Sinks Hub Drains Bck Wtr Valve Floor Drains Image: Service of the servic
Contractor/Builder POWER PLUMBING CO PO BOX 23144 TIGARD, OR 972813144 Work 2441900	Owner PORT OF PORTLAND P O BOX 3529 PORTLAND, OREGON 972083529	Top out App 13-25-00 Filier f.enal app Dec 12 2000
<u>Trust Account Applicant</u> POWER PLUMBING - P02805		<u> </u>
Project Details: # of Fixtures	20	
Commercial?	20 Yes	



14025 N RIVERGATE BLVD	00-164147-000-00-PT	Plumbing Permit	,
Commercial/Multifamily/Addition/Alteration/F HGH TEMP SAN. SEWER ON PROPERTY65'. ADD 7 TO STRM 08/30/00 R971260260 Addition SECTION 26 2 N 1 W	Replace Recd: 08/01/00 Issued: 08/01/00 Issued: 08/01/00 45' STORM TO PERMIT/ADD 15' OF REPAIR 2N1W26C 01200	Water Closets	Kitche Dishw Garb. Drink 2-Cor 3-Cor Hand
Lot/Bik1/Legal TL 1200 5.25 ACRES		Clothes Washers	Floor
Applicant BILL ERICKSON HEAVY CONSTRUCTION * PO BOX 1900 OREGON CITY, OR 970450066 Work 5036553	Contractor/Builder BILL ERICKSON HEAVY CONSTRUCTION * PO BOX 1900 OREGON CITY, OR 970450066 Work 5036553	Laundry Trays Serv/Mop Sinks Floor Drains	Bar S Hub I Backt
<u>Owner</u> PORT OF PORTLAND P O BOX 3529 PORTLAND, OR 97208-3529	Owner PORT OF PORTLAND PO BOX 3529 PORTLAND, OR 97208-3529		ze. Ya
Project Details:			
Sanitary Sewer # of feet	65		
Storm sewer # of feet	760	<u> </u>	
New Exterior Installation? Commercial?	Yes Yes		

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hen Sinks Area Drains Catch Basins nwashers Drywells rb. Disposals nk Fountains Soak Trench Comp Sinks Interceptor omp Sinks Sewer Caps nd Sinks Conn. Sewer Conn. Storm or Sinks Rain Drains Sinks Bck Wtr Valve Drains kflow Prvntr Reversal repain 224 2000 erut a sull SI

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14025 N RIVERGATE BLVD 00-164147-000-00-PT Commercial/Multifamily/Repair-Remodel F HIGH TEMP Iss SAN SEWER ON PROPERTY 65' ADD 745' STORM TO PERMIT

R971260030 Addition SECTION 26 2 N 1 W Lot/Bik1/Legal TL 1300 0.45 ACRES	2N1W26C 01300
Applicant	Contractor/Builder
BILL ERICKSON HEAVY CONSTRUCTION *	BILL ERICKSON HEAVY CONSTRUCTION *
PO BOX 1900	PO BOX 1900
OREGON CITY, OR 970450066	OREGON CITY, OR 970450066
Work 6553478	Work 6553478
<u>Owner</u>	<u>Owner</u>
PORT OF PORTLAND	PORT OF PORTLAND
P O BOX 3529	PO BOX 3529
PORTLAND, OR 97208-3529	PORTLAND, OR 97208-3529
Project Details: Sanitary Sewer # of feet Storm sewer # of feet New Exterior Installation? Commercial?	65 74 <u>5</u> Yes Yes

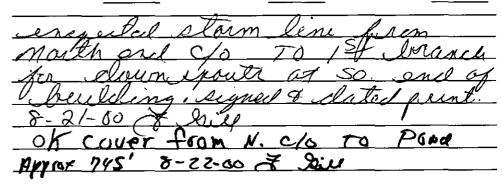


Plumbing Permit

Recd: 08/01/00

Issued: 08/01/00

Water Closets	Kitchen Sinks Dishwashers	Area Drains Catch Basins	-
Wash Basins	Garb. Disposals	Drywells	
Bathtubs	Drink Fountains	Soak Trench	
Showers	2-Comp Sinks	Interceptor	
Bidets	3-Comp Sinks	Sewer Caps	
Water Heaters	Hand Sinks	Conn. Sewer	
Clothes Washers	Floor Sinks	Conn. Storm	
Laundry Trays	Bar Sinks	Rain Drains	
Serv/Mop Sinks	Hub Drains	Bck Wtr Valve	
Floor Drains	Backflow Prvntr	Reversal	



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14025 N RIVERGATE BLVD	00-187859-000-00-PT	Plumbing Permit		IVR #: 2074176
Commercial/Multifamily/Addition/Alteration. HI TEMP BACKFLOW DEVICE FOR LANDSCAPE	/Replace Recd: 12/04/00 Issued: 12/04/00	Water Closets	Kitchen Sinks Dishwashers	Area Drains Catch Basins
R971260260 Addition SECTION 26 2 N 1 W Lot/Blk1/Legal TL 1200 5.25 ACRES	2N1W26C 01200	Wash Basins Bathtubs Showers Bidets Water Heaters	Garb. Disposals Drink Fountains 2-Comp Sinks 3-Comp Sinks Hand Sinks	Soak Trench
Applicant CASCADIAN LANDSCAPERS INC 13495 NW THOMPSON RD PORTLAND, OR 972293637 Work 6453351	Contractor/Builder CASCADIAN LANDSCAPERS INC 13495 NW THOMPSON RD PORTLAND, OR 972293637 Work 6453351	Ciothes Washers Laundry Trays Serv/Mop Sinks Floor Drains	Floor Sinks	Conn. Sewer Conn. Storm Rain Drains Bck Wtr Valve Reversal
<u>Owner</u> STEELMILL WAREHOUSE LLC 2050 NW FRONT AVE PORTLAND, OR 97209				
Project Details: Occupancy Group - PT # of Fixtures Backtlow Preventer Total Fees Paid	Commercial/Industrial 1 1 \$56.16	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
EAST SIDE OF DIILO FRACAS. 11/2 950 XL WITHINS SCOTAL NO. UNKNUM				

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APPENDIX B Summary of Inriver Sediment Data in Vicinity of Outfall 53A

Table B-1 Inriver Sediment Samples - Upriver from and Adjacent to Outfall 53A

				Up	river							Ou	tfall						
Location (ft from C	F along shore)	500' up	250' up			5' up			50' d					down		75' down	150' down		
	(ft offshore)	100' offshore	300' offshore			ffshore			75' of				1	fshore	•	100' offshore	100' offshore		
	Study	LWG Round 2	LWG Round 2		LWG Round 3				LWG Round 2				LWG Round 2			LWG Round 2	LWG Round 2		
	Sample Type	Surface	Surface	Surface	Subsurface	Subsurface	Subsurface	Surface	Subsurface	Subsurface	Subsurface	Surface	Subsurface	Subsurface	Subsurface	Surface	Surface		JSCS ⁽¹⁾
	Sample ID	LW2-G040	LW2-G039	LW3-G609	LW3-C609-B	LW3-C609-C	LW3-C609-D	LW2-G038	LW2-C038b	LW2-C038c	LW2-C038d	LW2-G034	LW2-C034b	LW2-C034c	LW2-C034e	LW2-G035	LW2-G033	Scree	ning Level Value
	Sample Date Depth	7/23/2004 0-24 cm	7/23/2004 0-29 cm	11/28/2007 0-25 cm	12/13/2007 30-151 cm	12/13/2007 151-273 cm	12/13/2007 273-311 cm	9/8/2004 0-26 cm	11/1/2004 30-154 cm	11/1/2004 154-252 cm	11/1/2004 252-310 cm	7/26/2004 0-22 cm	9/29/2004 30-75 cm	9/29/2004 75-128 cm	9/29/2004 188-223 cm	7/26/2004 0-28 cm	7/26/2004 0-28 cm	(Toxicity)	(Bioaccumulation)
Class Analyte	Units ⁽²⁾	0-24 cm	0-27 cm	0-25 cm	50-151 cm	151-275 cm	275-511 cm	0-20 cm	50-154 cm	15 4 -252 cm	232-310 cm	0-22 cm	50-75 cm	75-120 cm	100-225 cm	0-20 cm	0-20 cm	(Toxicity)	(bioacculturation)
Conventional	Units																		
Total Organic Carbon	%	0.39	2.43	2.14	2.19 T	2.27	0.26	0.8	0.23	0.12	0.93	0.3	0.16	0.49	0.18	2.16	2.02		
Total Solids	%	NA	NA	49.1	55.4	59.6	72.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Metals					AF 000 m		45000												
Aluminum Antimony	mg/Kg mg/Kg	0.11 UJ	35400 0.16 UJ	28300 0.57 J	27000 T 0.325 JT	28200 0.49 J	17900 0.17 J	16900 T 0.135 JT	13500 0.11 UJ	13300 0.11 UJ	17500 0.08 UJ	20500 0.1 UJ	12000 0.11 UJ	13600 0.1 UJ	12200 0.1 UJ	35300 0.18 J	29900 0.13 UJ	64	
Arsenic	mg/Kg	10.1 J	3.75 J	5.04	3.12 T	3.62	1.54	3.37 JT	3.52	2.83	3.66	3.9	2.78	3.38	2.24	4.2	4.3	33	7
Cadmium	mg/Kg	0.137	0.328	1.06	0.54 T	0.669	0.105	0.186 T	0.205	0.098	0.161	0.138	0.13	0.146	0.109	0.391	0.264	4.98	1
Chromium	mg/Kg	14.6	37.6	33.2	23.8 T	24.8	15.5	30.3 T	17.8	15.8	20.9	23.8	18.1	17.6	16	47.1	35	111	
Copper	mg/Kg	13.4	46.6	40.3	42.3 T	44.3	18.6	18.7 T	17.9	13.3	22.4	22.8	14.9	16	11.8	44	33.7	149	
Lead Mercurv	mg/Kg	17.7 0.02	13.9 0.06	34 0.249	23.7 T 0.27	26.8 0.261	5.05 0.022	10.7 T 0.022 T	0.029	4.17	5.59	17.6 J 0.03	10.1 0.016	7.07 0.093	4.78	15.6 J 0.07	13.4 J 0.05	128 1.06	17 0.07
Nickel	mg/Kg mg/Kg	0.02 14.7 J	0.06 27.3 J	23.4	24.2 T	24.8	20.8	0.022 T 22.3 T	19.2	0.03	0.028 21.4	23	0.016	19.3	18.3	28.5	27.4	48.6	0.07
Selenium	mg/Kg	0.06 J	0.26 J	NA	NA	NA	NA	0.065 JT	0.05 U	0.04 U	0.1 U	0.05 U	0.04 U	0.04 U	0.04 U	0.22	0.11	5	2
Silver	mg/Kg	0.053	0.214	0.44	0.46 JT	0.59 J	0.08 J	0.067 T	0.058	0.029	0.056	0.052	0.078	0.073	0.037	0.275	0.138	5	
Zinc	mg/Kg	78.7	119	187	146 T	155	61.6	125 T	96.2	50.9	56	120	113	77.5	62.9	135	123	459	
Pesticides		0.105 MI	0.200 11	171	£ 1 T	67	0.16.17	0.224 1	0.204 MI	0.54 MT	0.402 11	0.206 MI	0.0241 11	0.054 NI	0.261 MT	0.000 11	0.272 11		
2,4'-DDD 4.4'-DDD	μg/Kg μg/Kg	0.105 NJ 0.545 J	0.308 NJ 1.95 J	1.7 U 19	5.1 J 11	6.7 14	0.16 U 0.073 U	0.224 J 0.977 J	0.394 NJ 1.56 NJ	0.56 NJ 0.803 NJ	0.402 NJ 0.0581 UJ	0.396 NJ 2.53	0.0341 UJ 0.182 J	0.056 NJ 0.519 J	0.261 NJ 1.25 J	0.663 NJ 2.1	0.272 NJ 1.79		
Total DDD ⁽³⁾	μg/Kg μg/Kg	0.545 J 0.650 NJ	2.26 NJ	19	11 16 J	21	0.073 U 0.16 U	1.20 J	1.50 NJ	1.36 NJ	0.0381 UJ 0.402 NJ	2.33 2.93 NJ	0.182 J 0.182 J	0.519 J	1.25 J	2.1 2.76 NJ	2.06 NJ	28	0.33
2.4'-DDE	μg/Kg μg/Kg	0.0334 U	0.0623 U	0.47 U	0.25 U	0.22 U	0.046 U	0.205 U	0.0367 U	0.0343 U	0.0412 UJ	0.0343 U	0.0362 UJ	0.0365 UJ	0.0367 UJ	1.17 NJ	0.217 NJ		0.55
4,4'-DDE	μg/Kg μg/Kg	0.274 J	2.77	13 U	12 J	10 J	0.027 U	1.03 J	0.226 NJ	0.281 NJ	0.147 J	2.9	0.079 J	0.235 J	0.706 J	3.4	1.24		
Total DDE ⁽³⁾	μg/Kg	0.274 J	2.77	13 U	12 J	10 J	0.046 U	1.03 J	0.226 NJ	0.281 NJ	0.147 J	2.9	0.079 J	0.235 J	0.706 J	4.6 NJ	1.46 NJ	31.3	0.33
2,4'-DDT	µg/Kg	0.471 NJ	1.02	41 U	3.1 U	6.6 U	0.061 U	0.271 U	0.0485 UJ	0.0454 UJ	0.0545 UJ	0.227 J	0.0479 UJ	0.0483 UJ	0.0486 UJ	0.3 J	0.0586 U		
4,4'-DDT	µg/Kg	0.152 J	0.358 J	4.4 U	5 U	83	0.18 U	0.334 UJ	NA	0.191 NJ	0.0672 UJ	25.8	0.083 NJ	0.115 J	0.149 J	0.564 NJ	0.323		
Total DDT ⁽³⁾	µg/Kg	0.623 NJ	1.38 J	41 U	5 U	83	0.18 U	ND	ND	0.191 NJ	ND	26.0 J	0.083 NJ	0.115 J	0.149 J	0.864 NJ	0.323	62.9	0.33
Estimated Total DDx ⁽⁴⁾	µg/Kg	1.55 NJ	6.41 NJ	19	28 J	110 J	0.18 U	2.23 J	2.18 NJ	0.549 NJ	0.549 NJ	31.9 NJ	0.344 NJ	0.925 NJ	2.37 NJ	8.20 NJ	3.84 NJ		0.33
Aldrin alpha-BHC (a-BHC)	µg/Kg	0.268 NJ	0.688 NJ 0.444 NJ	1.3 U 1.8 J	0.12 U 0.14 U	0.12 U 0.097 U	0.12 U 0.097 U	0.187 UJ 0.256 J	0.0336 UJ 0.375 J	0.0314 UJ 0.697 J	0.0377 UJ 0.0403 UJ	0.239 NJ 0.047 J	0.0332 UJ 0.0354 UJ	0.0334 UJ 0.0357 UJ	0.0336 UJ 0.266 NJ	0.601 NJ 0.161 J	0.0406 U 0.169 NJ	40	
beta-BHC (b-BHC)	μg/Kg μg/Kg	0.0235 U	3.72 NJ	3.4 U	0.14 U	0.097 U 0.19 U	0.097 U 0.14 U	0.202 U	5.22 NJ	4.23 NJ	4.42 NJ	1.05 NJ	1.98 NJ	2.05 NJ	2.75 NJ	3.63 NJ	2.71 NJ		
delta-BHC (d-BHC)	μg/Kg μg/Kg	0.345 NJ	0.797 NJ	2.1 U	0.27 U	0.11 U	0.11 U	0.428 UJ	0.0768 U	0.0717 U	0.0862 UJ	0.0716 U	0.0757 UJ	0.0763 UJ	0.0768 UJ	0.389 NJ	0.0926 U		
gamma-BHC (g-BHC, Lindane)	µg/Kg	0.0747 U	3.48 NJ	9.9 NJ	0.69 U	0.88 U	0.15 U	0.457 U	5.31 NJ	2.93 NJ	0.0921 UJ	0.0765 U	0.0809 UJ	0.0815 UJ	0.0821 UJ	0.119 U	0.099 U	4.99	
alpha-Chlordane ⁽⁵⁾	µg/Kg	0.0326 U	0.0607 U	0.32 U	0.031 U	0.031 U	0.031 U	0.199 U	0.0358 U	0.0334 U	0.046 J	0.372	0.0353 UJ	0.0356 UJ	0.0358 UJ	0.227	0.083 J		
beta-Chlordane ⁽⁵⁾	µg/Kg	0.0206 U	0.95 J	3.8 U	2 U	2 U	0.027 U	0.126 U	0.0226 UJ	0.0211 UJ	0.0254 UJ	0.339 NJ	0.0223 UJ	0.0225 UJ	0.0226 UJ	0.26 NJ	0.045 NJ		
Oxychlordane	µg/Kg	0.0176 U	0.0328 U	11 J	0.37 U	0.25 U	0.061 U	0.108 U	0.0194 U	0.0181 U	0.0217 UJ	0.0181 U	0.14 NJ	0.0192 UJ	0.0194 UJ	0.0281 U	0.0234 U		
cis-Nonachlor	μg/Kg	0.151 NJ	0.463 NJ	5.4 U 3.9 U	2.7 U	4.7 U	0.087 U	0.25 U	0.0448 UJ	0.0418 UJ	0.0503 UJ	0.447 NJ	0.0442 UJ	0.0445 UJ	0.0448 UJ	0.516 NJ	0.054 U		
trans-Nonachlor	µg/Kg	0.0355 U 0.151 NJ	0.24 J 1.65 NJ	3.9 U 11 J	0.76 U 2.7 U	0.5 U 4.7 U	0.034 U 0.087 U	0.217 U ND	0.039 U ND	0.0364 U ND	0.0438 UJ 0.046 J	0.279 1.44 NJ	0.0385 UJ 0.14 NJ	0.0388 UJ ND	0.039 UJ ND	0.085 NJ 1.09 NJ	0.047 U 0.128 NJ		
Estimated Total Chlordane ⁽⁰⁾ alpha-Endosulfan	μg/Kg μg/Kg	0.131 NJ 0.0282 U	0.0525 U	11 J 13 U	0.037 U	0.037 U	0.037 U	0.172 U	0.0309 U	0.0289 U	0.046 J 0.0347 UJ	0.0289 U	0.14 NJ 0.0305 UJ	0.0307 UJ	0.031 UJ	0.0449 U	0.128 NJ 0.0373 U	17.6	0.37
beta-Endosulfan	μg/Kg μg/Kg	2.87 NJ	0.0438 U	5.6 U	0.037 0	0.37 U	0.031 U	0.144 U	0.0258 UJ	0.0241 UJ	0.029 UJ	0.0241 U	0.225 NJ	0.318 NJ	0.186 J	0.0375 U	0.0311 U		
Dieldrin	μg/Kg	0.0501 U	0.262 J	3.8 U	0.33 U	0.17 U	0.03 U	0.307 U	0.055 U	0.0514 U	0.0618 UJ	0.308	0.0542 UJ	0.0547 UJ	0.055 UJ	0.0798 U	0.0663 U	61.8	0.0081
Endosulfan sulfate	µg/Kg	0.0723 UJ	0.135 UJ	2.1 U	0.25 U	0.17 U	0.058 U	0.442 UJ	0.0793 UJ	0.0741 UJ	0.0891 UJ	0.074 U	0.0782 UJ	0.0789 UJ	0.0794 UJ	0.115 U	0.0957 U		
Endrin Endrin aldehyde	μg/Kg	0.0388 UJ 0.0428 U	0.0723 UJ 0.0796 U	3.5 U 14 NJ	0.22 U 0.042 U	0.071 U 0.042 U	0.071 U 0.042 U	NA 0.262 U	NA 0.0469 UJ	NA 0.0438 UJ	0.643 NJ 0.0527 UJ	0.0438 U	0.042 UJ 0.0463 UJ	0.0424 UJ 0.0467 UJ	1.85 NJ 0.047 UJ	0.0681 U	0.0566 U	207	
Endrin aldenyde Endrin ketone	μg/Kg μg/Kg	0.0428 U 0.0288 U	0.0796 U 0.0536 U	6.4 NJ	0.042 U 0.66 U	0.042 U 1.5 U	0.042 U 0.029 U	0.262 U 0.176 U	0.0469 UJ 0.0316 U	0.0438 UJ 0.0295 U	0.0327 UJ 0.0355 UJ	0.0438 U 0.302 NJ	0.0463 UJ 0.0312 UJ	0.0467 UJ 0.0314 UJ	0.047 UJ 0.0316 UJ	0.0681 U 0.932 NJ	0.0566 U 0.078 NJ		
Heptachlor	μg/Kg μg/Kg	0.0298 U	0.0554 U	3.2 U	0.59 U	0.17 U	0.076 U	0.182 U	0.332 NJ	0.0305 UJ	0.0367 UJ	0.0305 U	0.0322 UJ	0.0325 UJ	0.0327 UJ	0.0474 U	0.0394 U	10	
Heptachlor epoxide	μg/Kg	0.0388 U	0.0723 U	0.69 U	0.32 U	0.19 U	0.26 NJ	0.238 U	0.0426 U	0.0398 U	0.0479 UJ	0.0398 U	0.042 UJ	0.0424 UJ	0.0427 UJ	0.0619 U	0.0514 U	16	
Methoxychlor	µg/Kg	0.0387 UJ	0.0721 UJ	5.3 U	0.48 U	0.6 U	0.075 U	0.237 UJ	0.0425 UJ	0.0397 UJ	0.0477 UJ	0.437 NJ	0.0419 UJ	0.0422 UJ	0.0425 UJ	0.0617 U	0.0513 U		
Mirex Toxaphene	µg/Kg	0.0352 U 9 U	0.0655 U 17 U	2.1 U 760 U	0.12 U 89 U	0.12 U 110 U	0.12 U 4.8 U	0.215 UJ 56 U	0.0386 UJ 10 U	0.0361 UJ 9 U	0.0433 UJ 11 U	0.036 U 9 U	0.0381 UJ 10 UJ	0.0384 UJ 10 UJ	0.0386 UJ 10 UJ	0.056 U 15 U	0.0466 U 12 U		
Polychlorinated Biphenyl Congeners	µg/Kg	9 U	1/ U	700 U	89 U	110 U	4.8 U	30 U	10 0	9 U	11 U	90	10 UJ	10 UJ	10 UJ	15 U	12 U		
Estimated Total PCBs ⁽⁷⁾	µg/Kg	NA	NA	116 J	91.3 J	116 J	1.83 J	62.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	676	0.39
Polychlorinated Biphenyl Aroclors	μg/ κg	INA	INA	110 J	91.0 J	110 J	1.03 J	02.0	INA	INA	INA	INA	INA	INA	INA	INA	INA	0/0	0.39
Aroclor 1016	µg/Kg	1.2 U	4.5 UJ	1.4 U	1.3 U	1.3 U	1.3 U	1.49 U	1.32 U	1.25 U	1.48 U	1.3 U	1.33 U	1.35 U	1.34 U	3.9 U	3.2 U	530	
Aroclor 1221	μg/Kg	1.2 U	4.5 UJ	1.4 U	1.3 U	1.3 U	1.3 U	2.76 U	2.44 U	2.32 U	2.74 U	2.3 U	2.47 U	2.5 U	2.49 U	7.1 U	6 U		
Aroclor 1232	µg/Kg	2.4 UJ	4.5 UJ	1.4 U	1.3 U	1.3 U	1.3 U	2.49 U	2.2 U	2.1 U	2.48 U	2.1 U	2.23 U	2.26 U	2.25 U	6.5 U	5.4 U		
Aroclor 1242	µg/Kg	2.4 UJ	4.5 UJ	9.7 U	20 NJ	1.3 U	1.3 U	120	1.34 U	1.27 U	1.51 U	1.3 U	13.7 J	1.37 U	1.37 U	3.9 U	3.3 U		
Aroclor 1248 Aroclor 1254	μg/Kg μg/Kg	17 2.4 UJ	4.5 UJ 4.5 UJ	1.4 U 100 J	1.3 U 95 J	1.3 U 62 J	1.3 U 1.3 U	1.94 U 38.9	24.2 J 15.5 J	1.63 U 0.762 U	1.93 U 0.899 U	31 J 0.77 U	1.74 U 13.9 J	8.62 J 17 J	1.75 U 4.4 J	54 J 2.3 U	34 2 U	1500 300	
	μg/Kg μg/Kg	0.98 U	4.5 OJ 9 J	60	54 J	80 J	1.3 U	3.83	9.69 J	0.978 U	1.15 U	12	2.97 J	4.88 J	2.21 J	2.5 U 20 J	11	200	
Aroclor 1260																			
Aroclor 1260 Aroclor 1262	µg/Kg	2.3 U	4.5 UJ	1.4 U	1.3 U	1.3 U	1.3 U	1.39 U	1.23 U	1.17 U	1.38 U	1.2 U	1.25 U	1.26 U	1.25 U	3.6 U	3 U		
	μg/Kg μg/Kg	2.3 U 2 U 17	4.5 UJ 4.5 UJ 9 J	1.4 U 1.4 U 160 J	1.3 U 1.3 U 169 NJ	1.3 U 14 156 J	1.3 U 1.3 U 1.3 U	1.39 U 1.19 U 163	1.23 U 1.06 U 49.4 J	1.17 U 1.01 U ND	1.19 U	1 U	1.25 U 1.07 U 30.6 J	1.26 U 1.08 U 30.5 J	1.25 U 1.08 U 6.61 J	3.6 U 3.1 U 74 J	2.6 U 45		

Table B-1 Inriver Sediment Samples - Upriver from and Adjacent to Outfall 53A

				Upr	iver							Ou	tfall						
Location (ft from O	F along shore)	500' up	250' up	-1-		5' up			50' d	own			100' 0	down		75' down	150' down		
	(ft offshore)	100' offshore	300' offshore		225' o	offshore			75' of	fshore			50' of	fshore		100' offshore	100' offshore		
	Study	LWG Round 2	LWG Round 2	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 2	LWG Round 2	LWG Round 2	LWG Round 2	LWG Round 2	LWG Round 2	LWG Round 2	LWG Round 2	LWG Round 2	LWG Round 2		
	Sample Type	Surface	Surface	Surface	Subsurface	Subsurface	Subsurface	Surface	Subsurface	Subsurface	Subsurface	Surface	Subsurface	Subsurface	Subsurface	Surface	Surface		JSCS ⁽¹⁾
	Sample ID	LW2-G040	LW2-G039	LW3-G609	LW3-C609-B	LW3-C609-C	LW3-C609-D	LW2-G038	LW2-C038b	LW2-C038c	LW2-C038d	LW2-G034	LW2-C034b	LW2-C034c	LW2-C034e	LW2-G035	LW2-G033	Saraa	JSCS ²¹ ning Level Value
	Sample Date	7/23/2004	7/23/2004	11/28/2007	12/13/2007	12/13/2007	12/13/2007	9/8/2004	11/1/2004	11/1/2004	11/1/2004	7/26/2004	9/29/2004	9/29/2004	9/29/2004	7/26/2004	7/26/2004	Scree	ling Level value
	Depth	0-24 cm	0-29 cm	0-25 cm	30-151 cm	151-273 cm	273-311 cm	0-26 cm	30-154 cm	154-252 cm	252-310 cm	0-22 cm	30-75 cm	75-128 cm	188-223 cm	0-28 cm	0-28 cm	(Toxicity)	(Bioaccumulation)
Class Analyte	Units ⁽²⁾																		
Dioxins/Furans		I			1	I						1					I	-	I
Total TCDD toxicity equivalent ⁽⁷⁾	ng/Kg	NA	NA	1.74 JA	1.2 JA	0.711 JA	0.00102 JA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9	0.0091
Phthalates Bis(2-ethylhexyl) phthalate		10 U	91 U	150 U	70 U	70 U	7 U	72	49 U	7.3 U	4 U	110	18 J	14 J	7.4 J	210	120	800	330
Bis(2-einyinexyi) phinaiate Butylbenzyl phthalate	μg/Kg μg/Kg	2.1 U	3.8 U	66 U	32 U	32 U	3.2 U	11	9.8 U	2 U	2.2 U	4.1 U	2 U	2.1 U	2 U	6.4 U	7.4 J		530
Dibutyl phthalate	μg/Kg	3.6 U	7.9 J	170 U	79 U	79 U	7.9 U	9.8 U	17 U	3.8 J	3.8 U	7.1 U	3.5 U	3.5 U	4.1 J	12 U	4.7 U	100	60
Diethyl phthalate	µg/Kg	4.8 U	8.8 U	27 U	13 U	13 U	1.3 U	5.3 U	23 U	4.6 U	5.1 U	9.5 U	4.7 U	4.8 U	4.6 U	15 U	6.2 U	600	
Dimethyl phthalate	µg/Kg	7.1 J	4.6 U	21 U	10 U	10 U	1 U	2.8 U	12 U	2.4 U	2.6 U	4.9 U	2.4 U	2.5 U	2.4 U	9 J	3.2 U		
Di-n-octyl phthalate	μg/Kg	1.7 U	3.1 U	35 U	17 U	17 U	1.7 U	1.9 U	7.9 U	1.6 U	1.8 U	3.3 U	1.6 U	1.7 U	1.6 U	5.1 U	2.2 U		
Polycyclic Aromatic Hydrocarbons (PAHs) 1-Methylnaphthalene	µg/Kg	NA	NA	900	580	110	0.6 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
2-Methylnaphthalene	μg/Kg μg/Kg	3.8	3.1 J	550	320	160	1.2 J	5.2	13	1.8 J	0.79 J	1.2 J	2.4 J	4.6	4.2	12	5.6	200	
Acenaphthene	μg/Kg μg/Kg	3.1	3.3	12000	720	220	2	46	95	2 J	0.23 U	0.85 J	23	50	5.6	15	360	300	
Acenaphthylene	µg/Kg	6.7	5.1	1100	56	61	1.5 J	3.2	14	1.9 J	0.45 J	3	4.4	6.8	16	7.7	4.7	200	
Anthracene	µg/Kg	6.6	10	14000	540	220	4.6	13	97	3.3	0.62 J	5.9	10	16	18	17	8.1	845	
Benzo(a)anthracene Benzo(a)pyrene	μg/Kg μg/Kg	25 45	39 51	10000 7800	470 400	580 820	18 27	25 30	88 110	12	2.6	54 48	27 32	50 52	120	70 87	46 60	1050 1450	
Benzo(e)pyrene	μg/Kg μg/Kg	45 NA	NA	6700	380	770	26	NA	NA	I/ NA	Z.9 NA	40 NA	NA	J2 NA	NA		NA		
Benzo(b)fluoranthene	μg/Kg μg/Kg	47	67	4800	260	530	18	52	100	14	3.2	52	40	43	80	120	79		
Benzo(g,h,i)perylene	µg/Kg	49	43	4600	290	770	30	28	120	18	2.3 J	26	20	42	88	82	55	300	
Benzo(k)fluoranthene	µg/Kg	15	21	2100	110	230	8.3	16	29	4.5	1.1 J	19	22	34	70	40	25	13000	
Chrysene Dibenz(a,h)anthracene	μg/Kg μg/Kg	40 5.4	61 6.3	11000 770	510 37	590 71	23	47 5.3	120 14	17 2.2 J	2.4 J 0.48 J	48	46	64 6	160	120	74 9.5	1290 1300	
Dibenzothiophene	μg/Kg μg/Kg	J.4 NA	0.5 NA	11000	430	130	2.4	J.J NA	NA	NA	0.48 J NA	NA	NA	NA	NA		9.5 NA		
Fluoranthene	μg/Kg	33	59	28000	1600	1600	47	83	170	10	4.1	59	120	210	300	190	130	2230	37000
Fluorene	µg/Kg	2.3 J	3.2 J	10000	540	160	1.6 J	4.7	110	3.3	0.28 U	0.63 J	2.9	17	5.5	14	6	536	
Indeno(1,2,3-cd)pyrene	µg/Kg	39	40	4400 690	260	720 350	28 3.8	26	110 46	17 9.8 U	2.7	27 3.2	19 2.7	37 8.3	77 8.8	80	52	100	
Naphthalene Perylene	μg/Kg μg/Kg	11 NA	11 U NA	1700	180	280	3.8 45	22 NA	40 NA	9.8 U NA	8.1 U NA	3.2 NA	2.7 NA	8.3 NA	8.8 NA	17 NA	11 NA	561	
Phenanthrene	μg/Kg μg/Kg	21	25	87000	3900	1400	33	110	550	30	2.2 J	7.8	35	230	140	92	35	1170	
Pyrene	μg/Kg	40	70	39000	2100	2700	61	73	290	44	4.5	75	99	200	360	170	120	1520	1900
High Molecular Weight PAH	μg/Kg	NA	NA	110000 T	6200 T	8900 T	270 T	NA	NA	NA	NA	NA	NA	NA	NA		NA		
Low Molecular Weight PAH	µg/Kg	NA	NA	130000 T	6400 T	2600 T	48 JT	NA	NA	NA	NA	NA 126.00	NA	NA	NA		NA		
Estimated Total PAHs ⁽⁷⁾ Phenolic SVOCs	µg/Kg	392.9	507	240000 T	13000 T	11000 T	320 JT	589.4	2076	198	30.34	436.88	509	1070.7	1585.1	1149.7	1080.9		
2,3,4,5-Tetrachlorophenol	ug/Kg	0.8 U	7.3 U	4.2 U	0.38 U	0.34 U	0.28 U	0.88 U	0.76 U	0.75 U	0.84 U	0.79 U	0.77 U	0.78 U	0.76 U	6.2 U	5.2 U		
2,3,4,6;2,3,5,6-Tetrachlorophenol coelution	μg/Kg	0.5 U	4.6 U	0.34 U	0.31 U	0.32 J	0.23 U	0.55 U	0.47 U	0.47 U	0.52 U	0.49 U	0.48 U	0.88 U	0.47 U	3.9 U	3.2 U		
2,4,5-Trichlorophenol	µg/Kg	0.4 U	3.7 U	9.8 U	0.99 U	0.89 U	0.73 U	0.44 U	0.38 U	0.38 U	0.42 U	0.4 U	0.47 U	0.41 U	0.43 U	3.1 U	2.6 U		
2,4,6-Trichlorophenol	μg/Kg	0.5 U	4.6 U	0.22 U	1.6 J	1.2 J	0.15 U	0.55 U	0.47 U	0.47 U	0.52 U	0.81 J	0.48 U	0.49 U	0.47 U	3.9 U	3.2 U		
2,4-Dichlorophenol	μg/Kg	2.5 U	4.6 U	21 U	10 U	10 U	1 U	2.8 U	12 U	2.4 U	2.6 U	4.9 U	2.4 U	2.5 U	2.4 U	7.7 U	3.2 U		
2,4-Dimethylphenol 2,4-Dinitrophenol	µg/Kg	7.6 U 50 U	14 U 91 U	120 U 350 U	55 UJ 170 U	55 UJ 170 U	5.5 UJ 17 U	8.3 U 55 U	36 U 240 U	7.1 U 47 U	8 U 52 U	15 U 98 U	NA 48 UJ	NA 49 UJ	NA 47 UJ	24 U 160 U	9.8 U 64 U		
2-Chlorophenol	μg/Kg μg/Kg	2.4 U	4.3 U	41 U	20 U	20 U	2 U	2.6 U	12 U	2.2 U	2.5 U	4.7 U	2.3 U	2.3 U	2.3 U	7.3 U	3.1 U		
2-Methylphenol	μg/Kg μg/Kg	4.7 U	8.6 U	31 U	15 U	15 U	1.5 U	5.2 U	23 U	4.4 U	4.9 U	9.3 U	4.5 UJ	4.6 UJ	4.5 UJ	15 U	6.1 U		
2-Nitrophenol	µg/Kg	3.6 U	6.6 U	31 U	15 U	15 U	1.5 U	4 U	17 U	3.4 U	3.8 U	7.1 U	3.5 U	3.5 U	3.4 U	12 U	4.7 U		
4,6-Dinitro-2-methylphenol	µg/Kg	2.4 U	4.3 U	29 U	14 U	14 U	1.4 U	2.6 U	12 U	2.2 U	2.5 U	4.7 U	2.3 U	2.3 U	2.3 U	7.3 U	3.1 U		
4-Chloro-3-methylphenol 4-Methylphenol	μg/Kg μg/Kg	2.9 U 4 U	5.3 U 7.3 U	29 U 31 U	14 U 63 J	14 U 120	1.4 U 1.5 U	3.2 U 23	14 U 19 U	2.8 U 3.8 U	3.1 U 4.2 U	5.7 U 7.9 U	2.8 U 3.9 UJ	2.9 U 3.9 UJ	2.8 U 3.8 UJ	8.9 U 13 U	3.8 U 5.2 U		
4-Nitrophenol	μg/Kg μg/Kg	4 U 41 U	7.5 U 76 U	370 U	180 U	120 180 U	1.5 U	1.04 U	0.884 U	0.87 U	0.982 U	82 U	40 U	41 U	40 U	130 U	54 U		
Pentachlorophenol	μg/Kg	0.54 U	4.9 U	1.3 U	9.3 NJ	3.3 J	1.1 J	0.59 U	0.51 U	0.51 U	0.57 U	0.53 U	0.52 U	0.53 U	0.51 U	4.2 U	3.5 U	1000	250
Phenol	μg/Kg	8.2 J	4.8 U	41 U	20 U	20 U	2.1 J	2.9 U	13 U	2.5 U	2.9 J	5.2 U	11 U	5.3 U	8.1 U	11 J	5.3 J	50	
Organonitrogen SVOCs 2.4-Dinitrotoluene		3.9 U	7 1 11	31 U	15 U	15 U	1.5 U	4.3 U	19 U	3.7 U	4.1.17	771	3.7 U	3.8 U	3.7 U	10.11	6 U		r
2,4-Dinitrotoluene 2,6-Dinitrotoluene	μg/Kg μg/Kg	3.9 U 3.9 U	7.1 U 7.1 U	31 U 41 U	15 U 20 U	15 U 20 U	1.5 U 2 U	4.3 U 4.3 U	19 U 19 U	3.7 U 3.7 U	4.1 U 4.1 U	7.6 U 7.6 U	3.7 U 3.7 U	3.8 U 3.8 U	3.7 U 3.7 U	12 U 12 U	5 U 5 U		
2-Nitroaniline	μg/Kg μg/Kg	3.7 U	6.8 U	66 U	32 U	32 U	3.2 U	4.5 U 4.1 U	19 U 18 U	3.5 U	4.1 U 3.9 U	7.4 U	3.6 U	3.7 U	3.6 U	12 U	4.8 U		
3-Nitroaniline	µg/Kg	3.6 U	6.6 U	51 U	25 U	25 U	2.5 U	4 UJ	17 U	3.4 U	3.8 U	7.1 U	3.5 U	3.5 U	3.4 U	12 U	4.7 U		
4-Chloroaniline	µg/Kg	2.9 U	5.3 U	39 U	19 U	19 U	1.9 U	3.2 U	14 U	2.8 U	3.1 U	5.7 U	2.8 U	2.9 U	2.8 U	8.9 U	3.8 U		
4-Nitroaniline Aniline	µg/Kg	4.7 U 2.1 U	8.6 U 3.8 U	37 U 31 U	18 U 15 U	18 U 15 U	1.8 U 1.5 U	5.2 U 2.3 U	23 U 9.8 U	4.4 U 2 U	4.9 U 2.2 U	9.3 U 4.1 U	4.5 U 2 U	4.6 U 2.1 U	4.5 U 2 U	15 U 6.4 U	6.1 U 2.7 U		
Carbazole	μg/Kg μg/Kg	2.1 U 1.8 U	3.8 U 3.3 U	720	15 U 29 J	21 J	1.5 U 1.3 U	2.3 U 3.8 J	9.8 U 8.5 U	2 U 1.7 U	2.2 U 1.9 U	4.1 U 16 J	2.0 2.3 J	2.1 U 2.9 J	2 U 4.9 J	6.4 U 10 J	6.3 J	1600	
Nitrobenzene	μg/Kg μg/Kg	2.8 U	5.1 U	45 U	22 U	21 J 22 U	2.2 U	3.1 U	14 U	2.6 U	2.9 U	5.5 U	2.3 J 2.7 U	2.9 J 2.7 U	2.7 U	8.5 U	3.6 U		
N-Nitrosodimethylamine	μg/Kg	8.4 U	16 U	130 U	61 U	61 U	6.1 U	9.2 U	40 U	7.9 U	8.8 U	17 U	8.1 U	8.2 U	8 U	26 U	11 U		
N-Nitrosodimethylamine N-Nitrosodiphenylamine N-Nitrosodipropylamine		8.4 U 3.1 U 4.4 U	16 U 5.6 U 8.1 U	130 U 33 U 49 U	61 U 16 U 24 U	61 U 16 U 24 U	6.1 U 1.6 U 2.4 U	9.2 U 3.4 U 4.9 U	40 U 15 U 21 U	7.9 U 2.9 U 4.2 U	8.8 U 3.2 U 4.6 U	17 U 6 U 8.7 U	8.1 U 2.9 U 4.3 U	8.2 U 7.5 J 4.4 U	2.9 U 4.2 U	<u>26 U</u> 9.4 U 14 U	11 U 3.9 U 5.7 U		

Table B-1 Inriver Sediment Samples - Upriver from and Adjacent to Outfall 53A

				Un	river							0.	tfall						
	Location (ft from OF along shore)	500' up	250' up	00	175	' un			50' (lown		04	100'	down		75' down	150' down		
	(ft offshore)	100' offshore	300' offshore			ffshore			75' of				50' of			100' offshore	100' offshore	1	
	Study	LWG Round 2	LWG Round 2	LWG Round 3		LWG Round 3	LWG Round 3	I WG Round 2	1	LWG Round 2	I WG Round 2	LWG Round 2			LWG Round 2	LWG Round 2	LWG Round 2	1	
	Sample Type	Surface	Surface	Surface	Subsurface	Subsurface	Subsurface	Surface	Subsurface	Subsurface	Subsurface	Surface	Subsurface	Subsurface	Subsurface	Surface	Surface	1	
	Sample ID	LW2-G040	LW2-G039	LW3-G609	LW3-C609-B	LW3-C609-C	LW3-C609-D	LW2-G038	LW2-C038b	LW2-C038c	LW2-C038d	LW2-G034	LW2-C034b	LW2-C034c	LW2-C034e	LW2-G035	LW2-G033	-	JSCS ⁽¹⁾
	Sample ID Sample Date	7/23/2004	7/23/2004	11/28/2007	12/13/2007	12/13/2007	12/13/2007	9/8/2004	11/1/2004	11/1/2004	11/1/2004	7/26/2004	9/29/2004	9/29/2004	9/29/2004	7/26/2004	7/26/2004	Scree	ning Level Value
	Sample Date Depth	0-24 cm	0-29 cm	0-25 cm	30-151 cm	151-273 cm	273-311 cm	0-26 cm	30-154 cm	154-252 cm	252-310 cm	0-22 cm	30-75 cm	75-128 cm	188-223 cm	0-28 cm	0-28 cm	(Torisity)	(Bioaccumulation)
Class Amelate	1	0-24 CIII	0-29 CIII	0-25 CIII	50-151 cm	151-275 cm	275-511 CIII	0-20 cm	30-134 cm	154-252 cm	252-510 cm	0-22 CIII	50-75 cm	75-128 cm	188-225 CIII	0-28 CIII	0-28 Chi	(Toxicity)	(Bioaccumulation)
Class Analyte	Units ⁽²⁾																		
Halogenated SVOCs			ı <u> </u>	r	,	r	·					·	· · · · ·		. <u> </u>				т <u> </u>
1,2,4-Trichlorobenzene	µg/Kg	2.1 U	3.8 U	53 U	26 U	26 U	2.6 U	2.3 U	9.8 U	2 U	2.2 U	4.1 U	2 U	2.1 U	2 U	6.4 U	2.7 U	9200	
1,2-Dichlorobenzene	µg/Kg	1.8 U	3.3 U	59 U	29 U	29 U	2.9 U	2 U	8.5 U	1.7 U	1.9 U	3.6 U	1.8 U	1.8 U	1.7 U	5.6 U	2.4 U	1700	
1,3-Dichlorobenzene	μg/Kg	2.2 U	4.1 U	61 U	30 U	30 U	3 U	2.5 U	11 U	2.1 U	2.3 U	4.4 U	2.2 U	2.2 U	2.1 U	6.8 U	2.9 U	300	
1,4-Dichlorobenzene	μg/Kg	2.6 U	4.8 U	59 U	29 U	29 U	2.9 U	2.9 U	13 U	2.5 U	2.8 U	5.2 U	2.5 U	2.6 U	2.5 U	8.1 U	3.4 U	300	
2-Chloronaphthalene 3.3'-Dichlorobenzidine	μg/Kg	5 U	9.1 U	33 U 76 U	16 U 37 U	16 U 37 U	1.6 U 3.7 U	5.5 U	24 U 25 U	4.7 U 4.8 U	5.2 U	9.8 U	4.8 U 4.9 U	4.9 U	4.7 U 4.9 U	16 U	6.4 U		
4-Bromophenyl phenyl eth	µg/Kg	5.1 U 2 U	9.3 U 3.6 U	33 U	16 U	16 U	3.7 U 1.6 U	5.6 U 2.2 U	9.2 U	4.8 U 1.9 U	5.4 U 2.1 U	11 U 3.8 U	4.9 U	5 U 1.9 U	4.9 U	16 U 6 U	6.6 U 2.5 U		
4-Bromophenyl phenyl eth 4-Chlorophenyl phenyl eth	(M), 11),	2.8 U	5.1 U	29 U	16 U 14 U	16 U 14 U	1.6 U	2.2 U 3.1 U	9.2 U 14 U	2.6 U	2.1 U 2.9 U	5.5 U	2.7 U	2.7 U	2.7 U	8.5 U	2.5 U 3.6 U		
Azobenzene	μg/Kg μg/Kg	2.8 U	6.1 U	29 U 23 U	14 U 11 U	14 U 11 U	1.4 U	3.7 U	14 U 16 U	2.6 U 3.1 U	2.9 U 3.5 U	6.6 U	3.2 U	3.3 U	3.2 U	8.5 U 11 U	4.3 U		
Bis(2-chloroethoxy) metha		<u> </u>	3.3 U	31 U	11 U	11 U	1.5 U	2 U	8.5 U	1.7 U	1.9 U	3.6 U	1.8 U	1.8 U	1.7 U	5.6 U	2.4 U		
Bis(2-chloroethyl) ether		3.3 U	6.1 U	39 U	19 U	19 U	1.9 U	3.7 U	16 U	3.1 U	3.5 U	6.6 U	3.2 U	3.3 U	3.2 U	11 U	4.3 U		
Bis(2-chloroisopropyl) ethe		1.7 U	3.1 U	53 U	26 U	26 U	2.6 U	1.9 U	7.9 U	1.6 U	1.8 U	3.3 UJ	1.6 U	1.7 U	1.6 U	5.1 U	2.2 U		
Hexachlorobenzene	μg/Rg μg/Kg	0.0175 U	5.3 U	3.4 U	0.45 J	0.59 J	0.068 U	0.107 U	14 U	3.3 J	3.1 U	5.7 U	2.8 U	2.9 U	2.8 U	8.9 U	0.0232 U	100	19
Hexachlorobutadiene	ug/Kg	0.0338 U	0.063 U	1.5 U	0.14 U	0.14 U	0.14 U	0.207 U	0.0371 U	0.0347 U	0.0417 UJ	0.0346 U	0.0366 UJ	0.0369 UJ	0.0371 UJ	0.0539 U	0.0448 U	600	
Hexachlorocyclopentadien		21 U	38 U	590 U	290 U	290 U	29 U	23 U	98 U	20 U	22 U	41 U	20 U	21 U	20 U	64 U	27 U	400	
Hexachloroethane	μg/Kg	0.05 UJ	0.0931 UJ	1.7 U	0.24 U	0.16 U	0.16 U	0.306 UJ	0.0549 UJ	0.0513 UJ	0.0616 UJ	6 U	0.0541 UJ	0.0545 UJ	0.0549 UJ	0.0796 UJ	0.892 J		
Oxygen-Containing SVOCs				•															
Benzoic acid	µg/Kg	140 U	250 U	2000 U	960 U	960 U	96 U	150 U	630 U	130 U	140 U	270 U	130 UJ	130 UJ	130 UJ	410 U	170 U		
Benzyl alcohol	µg/Kg	5.1 U	9.3 U	43 U	21 U	21 U	3.7 J	5.6 U	25 U	4.8 U	5.4 U	11 U	4.9 U	5 U	4.9 U	16 U	6.6 U		
Dibenzofuran	µg/Kg	1.9 J	2.1 J	1400	140	35	0.59 U	2.8	14	0.47 J	0.26 J	0.48 J	0.98 J	4.8	1.4 J	8.4	2.9		
Isophorone	μg/Kg	2.2 U	4.1 U	21 U	10 U	10 U	1 U	2.5 U	11 U	2.1 U	2.3 U	4.4 U	2.2 U	2.2 U	2.1 U	6.8 U	2.9 U		
Total Petroleum Hydrocarbons (7	,																		
Diesel Range Hydrocarbon		NA			460 J	510 J	15 J	36 J	220 J	27 J	14 U	29 J	13 J	22 J	52 J	140 J	61 J		
Gasoline Range Hydrocarb	8.8	NA			NA	NA	NA	1.5 UT	35 J	1.3 U	1.5 U	1.4 UJ	1.4 U	1.4 U	2.8 U	2.1 UJT	1.8 UJ		
Residual Range Hydrocarb	ons mg/Kg	NA	NA	1800 J	860 J	1100 J	49 U	180 J	270 J	52 U	32 U	80 U	60 U	69 U	88 J	460 J	280 J		

NOTES;

J = Estimate

A = Total value based on limited number of analytes

NA = Not analyzed

ND = Not detected

NJ = Estimate, presumptive evidence of presence of material

T = Value is an average or selected result, numerical value was mathematically derived

U = The analyte was not detected above the reported sample quantification limit.

UJ = Not detected, and the detection limit is an estimate

-- No JSCS screening level available

µg/Kg = Micrograms per kilogram

mg/Kg = Milligrams per kilogram

⁽¹⁾ JSCS - Portland Harbor Joint Source Control Strategy (DEQ/EPA Final December 2005, Amended July 2007)

(2) All results reported on a dry-weight basis

 $^{\rm (3)}$ Totals for DDD, DDE, and DDT are the sum of the 2,4' and 4,4' isomers

⁽⁴⁾ Estimated Total DDx is sum of DDD, DDE and DDT

⁽⁵⁾ Alpha-chlordane is also known as cis-Chlordane. Beta-Chlordane is also known as trans-chlordane and gamma-chlordane.

 $^{(6)}\mbox{Total}$ Chlordane is the sum of alpha-, beta-, oxy- isomers and cis-, trans-nonachlors

⁽⁷⁾ Totals are calculated by assigning "0" to undetected constituents
 = concentration exceeds JSCS Toxicity Screening Level Value
 bold = concentration exceeds JSCS Bioaccumulation Screening Level Value

Table B-2 Inriver Sediment Samples Downriver from Outfall 53A

Location (ft from OF a		275' down	350' down	400' down	450' down	550' 0	down	700' down	1000' down	1150' down		1250' down		1275' down	1400' down		1450' d	down		1575' down		
	(ft offshore)	275 down 275' offshore	475' offshore	150' offshore	125' offshore	250' of		300' offshore	1000 down 100' offshore	on shore		1250 down 125' offshore		on shore	1400 down 150' offshore		325' off			60' offshore	i i	
	(It offshore) Study	LWG Round 2	LWG Round 3	LWG Round 2	LWG Round 2	LWG Round 3	LWG Round 3	LWG Round 2	LWG Round 2	OSM Pre-RI	LWG Round 2	LWG Round 2	LWG Round 2	OSM Pre-RI	LWG Round 2	LWG Round 3			LWG Round 3	LWG Round 2	I	
s	Sample Type	Surface	Surface	Surface	Surface	Surface	Subsurface	Surface	Surface	Beach	Surface	Subsurface	Subsurface	Beach	Surface	Surface	Subsurface	Subsurface	Subsurface	Surface	i i	
	Sample ID	LW2-G032	LW3-G607 ⁽²⁾	LW2-G031	LW2-B006	LW3-G608	LW3-C608-B	LW2-G030	LW2-G028	38012-3801	LW2-G027	LW2-C027b	LW2-C027c	38011-3801	LW2-G026	LW3-G605	LW3-C605-B	LW3-C605-C	LW3-C605-D	LW2-G025		JSCS ⁽¹⁾
S	Sample Date	7/23/2004	11/27/2007	8/4/2004	7/28/2004	11/27/2007	1/2/2008	7/23/2004	8/4/2004	10/10/2000	7/26/2004	9/29/2004	9/29/2004	10/10/2000	7/20/2004	11/27/2007	12/12/2007	12/12/2007	12/12/2007	7/26/2004	Screeni	ning Level Value
	Depth	0-28 cm	0-30 cm	0-29 cm	0-15 cm	0-30 cm	30-152 cm	0-28 cm	0-29 cm	0-10 cm	0-26 cm	30-150 cm	150-249 cm	0-10 cm	0-28 cm	0-30 cm	30-151 cm	151-273 cm	273-341 cm	0-19 cm	(Toxicity)	(Bioaccumulation
Class Analyte	Units ⁽³⁾																					
onventional																					·	
Total Organic Carbon	%	2.76	2.08	2.1	0.65	2.21	2.06	2.66	2.02	0.05	0.48	0.71	0.65	0.11	2.47	2.17	2.03	2.41	2.27	0.45		
Total Solids [etals	%	NA	43	NA	NA	40.9	51.8	39.1	48	NA	NA	NA	NA	NA	40.4	40.9	50	51.4	48.9	NA		
Aluminum	mg/Kg	25400	30800	30000	9170	32900	31800	28600	31200	NA	19600	21400	19300	NA	31900	33200	27900	29500	30500	12200		
Antimony	mg/Kg	0.15 UJ	0.51 J	0.2 J	0.09 UJ	0.4 J	0.63 J	0.16 UJ	0.19 J	9.89 U	0.09 UJ	0.11 UJ	0.09 UJ	10.4 U	0.12 J	0.38 J	0.25 J	0.3 J	0.21 J	0.41 J	64	
Arsenic	mg/Kg	3.92 J	3.61	4.6 J	2.52	4.86	4.95	3.67 J	3.71 J	2.2	2.7	3.8	2.63	2.2 U	3.87 J	3.77	3.04	3.33	3.75	2.7	33	7
Cadmium Chromium	mg/Kg	0.369 30.8	0.296 J 29.3	0.383 36.8	0.103 14	0.36 J 35.3	0.58 30.7	0.357 33.3	0.333 35.2	1 U 14.6	0.143 27.3	0.225 27	0.16 24.5	1.04 U 15.2	0.432 J 39.2	0.264 J 30.5	0.278 25.9	0.473 27.9	0.452 J 29.4	0.195 224	4.98	
Copper	mg/Kg mg/Kg	42.7	29.3 37.7	37.4	14 11.5 J	44.7	50.7	44.2	42.7	12.9	18.4	20.9	24.3	13.2	44.8 J	36.6	40.2	49.1	46	224	149	
Lead	mg/Kg	14.4	11	16.2	5.1	13	30.9	14.4	16.4	19.8 U	7.74 J	8.07	6.41	20.8 U	16.2 J	10	13.9	19.7	23.6	13.5 J	128	17
Mercury	mg/Kg	0.09	0.066	0.073	0.008 J	0.079	0.092	0.08	0.08	0.02 U	0.03	0.032	0.026	0.02 U	0.083	0.076	0.067	0.094	0.089 J	0.02	1.06	0.07
Nickel	mg/Kg	23 J	22.1 NA	23.1 J	16.9	25.8 NA	26.1	25 J	26 J	19.5	25.1	25.1	24.7	17.1	28.3	21.2 NA	24.2	25.4 NA	25.9	21.4	48.6	2
Selenium Silver	mg/Kg mg/Kg	0.21 J 0.237	0.21	0.12 0.165 J	0.05 U 0.025	0.21	0.746	0.24 UJ 0.239	0.12 0.309 J	1 U 1.98 U	0.04 U 0.049	0.06 J 0.075	0.06 J 0.087	1.04 U 2.08 U	0.28 0.229 J	0.2	0.22 NA	0.3	0.47 NA	0.04 U 0.169	5	2
Zinc	mg/Kg	118	101	118	85.8	109	157	119	114	66.7	84.5	84.7	65.4	54.4	135	100	105	124	153	287	459	
Pesticides											· · · · ·							'			·	
2,4'-DDD	µg/Kg	0.298 NJ	0.32 U	0.42 J	0.0299 U	0.31 U	3.4 NJ	1.4 NJ	0.859 J	NA	0.379	0.149	0.04 U	NA	0.262 NJ	0.32 U	0.44 U	0.67 NJ	2.8 NJ	2.02 NJ		
4,4'-DDD	µg/Kg	1.27 J 1.57 NJ	1.2 1.2	1.87 NJ 2.29 NJ	0.0447 U	1.5 1.5	3.4 6.8 NJ	2.26 J 3.66 NJ	3.38 NJ	NA	0.805	0.53399 0.683	0.289	NA NA	1.07 NJ	1.7 1.7	1.4 1.4 T	2.8 3.5 NJ	3.1 5.9 NJ	0.311 2 33 NI		
Total DDD ⁽⁴⁾ 2.4'-DDE	μg/Kg μg/Kg	2.03 NJ	0.24 U	2.29 NJ 0.864 J	ND 0.0317 U	0.057 U	6.8 NJ 1.4 U	3.66 NJ 0.066 U	4.24 NJ 3.24 J	NA	1.18 0.04 U	0.683 0.04 U	0.289 0.04 U	NA	1.33 NJ 0.062 U	0.057 U	0.2 U	3.5 NJ 0.046 U	0.7 U	2.33 NJ 0.0336 U	28	0.33
4.4'-DDE	μg/Kg μg/Kg	2.03 NJ 2.31 J	2	2.94 NJ	0.0317 U 0.042 U	2.7 J	6.8	3.42 J	5.24 J	NA	1.02	0.48899	0.244	NA	2.47 NJ	2.5	3.1	3.9	7.3 J	2.07 NJ		
Total DDE ⁽⁴⁾	μg/Kg	4.34 NJ	2	3.80 NJ	ND	2.7 J	6.8	3.42 J	8.52 NJ	NA	1.02	0.489	0.244	NA	2.47 NJ	2.5	3.1 T	3.9	7.3 J	2.07 NJ	31.3	0.33
2,4'-DDT	μg/Kg	1.21	0.5 U	0.0689 UJ	0.042 U	0.83	2.4 J	1.06 NJ	0.0702 UJ	NA	0.439	0.05 U	0.06 U	NA	0.082 U	0.52 U	0.72 U	0.7 U	2.5	5.8 NJ		
4,4'-DDT	µg/Kg	0.294 J	0.81 U	0.137 J	0.311 NJ	0.89 U	3.2 U	0.623	0.604 J	NA	0.65299	0.071	0.07 U	NA	0.15 NJ	1.5 J	1.5 J	1.7 J	4.1 J	2.53 J		
Total DDT ⁽⁴⁾	µg/Kg	1.50 J	0.81 U	0.137 J	0.311 NJ	0.83	2.4 J	1.68 NJ	0.604 J	NA	1.09	0.071	ND	NA	0.15 NJ	1.5 J	1.5 JT	1.7 J	6.6 J	8.33 NJ	62.9	0.33
Estimated Total DDx ⁽⁵⁾	µg/Kg	7.41 NJ	3.2	6.23 NJ	0.311 NJ	5.0 J	16 NJ	8.76 NJ	13.4 NJ	NA	3.30	1.24	0.533	NA	3.95 NJ	5.7 J	6.00 JT	9.1 NJ	20 NJ	12.7 NJ		0.33
Aldrin	µg/Kg	1.26 J	0.43 U	0.0477 U	0.0291 UJ	0.88 NJ	0.12 U	1.03 J	1.03 J	NA	0.03 U	0.04 U	0.04 U	NA	R	0.43 U	0.12 U	0.2 U	0.13 U	0.0308 U	40	
alpha-BHC (a-BHC) beta-BHC (b-BHC)	μg/Kg μg/Kg	2.15 NJ 6.65 J	0.12 U 0.17 U	0.061 J 0.716 J	0.031 U 1.29 NJ	0.12 U 0.31 U	0.097 U 1.3 U	0.282 5.29 NJ	0.08 J 0.398 J	NA NA	0.09899	0.04 U 1.43	0.04 U 0.04 U	NA NA	2.23 NJ 10.8 NJ	0.12 U 0.19 NJ	0.097 U 0.29 U	0.097 U 0.27	0.21 U 0.74 J	0.091 J 2.42 NJ		
delta-BHC (d-BHC)	μg/Kg μg/Kg	2.15 NJ	0.13 U	0.487 J	0.0664 UJ	0.16 J	0.11 U	0.138 UJ	0.246 J	NA	0.07 U	0.08 U	0.09 U	NA	0.13 UJ	0.14 U	0.11 U	0.11 U	0.12 U	0.0703 U		
gamma-BHC (g-BHC, Lindane)	µg/Kg	0.157 U	0.24 U	0.116 U	0.0709 U	0.35 U	1.2 U	0.147 U	0.119 U	NA	0.08 U	0.09 U	0.1 U	NA	0.139 U	0.25 U	0.2 U	0.062 U	0.21 U	0.0751 U	4.99	
alpha-Chlordane ⁽⁶⁾	µg/Kg	0.379 J	0.036 U	0.208 J	0.0309 U	0.038 U	0.031 U	0.425 NJ	0.579 J	NA	0.08299	0.09099	0.04 U	NA	0.0605 U	0.038 U	0.083 J	0.42	0.23 U	0.0327 U		
beta-Chlordane ⁽⁶⁾	µg/Kg	0.949 NJ	0.37	0.08 J	0.0195 U	0.52	0.2 U	1.02 J	0.706 J	NA	0.046	0.02 U	0.03 U	NA	0.0382 U	0.41 J	0.58 J	0.75	1.6	0.0207 U		
Oxychlordane	µg/Kg	0.037 U	0.071 U	0.0275 U	0.0167 U	0.3	0.21 U	0.0348 U	0.028 U	NA	0.02 U	0.02 U	0.02 U	NA	0.0327 U	0.21 J	0.061 U	0.17 U	0.49 U	0.0177 U		
cis-Nonachlor trans-Nonachlor	μg/Kg μg/Kg	0.824 NJ 0.306 NJ	0.49 U 0.16 J	0.0635 U 0.182 J	0.0387 U 0.0337 U	0.53 U 0.25 U	1.9 U 0.19 NJ	0.516 NJ 0.0701 U	0.584 J 0.796 J	NA NA	0.16099 0.04 U	0.05 U 0.04 U	0.05 U 0.05 U	NA NA	0.0757 U 0.233 NJ	0.41 U 0.15 J	0.59 U 0.19 J	0.66 U 0.41 J	1.7 U 0.31 U	0.95 NJ 0.0357 U		
Estimated Total Chlordane ⁽⁷⁾	μg/Kg μg/Kg	2.46 NJ	0.53 J	0.132 J	0.0557 0 NA	0.25 0	0.19 NJ	0.516 NJ	1.38 J	NA	0.290	0.0910	ND	NA	0.233 NJ	0.77 J	0.85 J	1.6 J	1.6	0.0557 C	17.6	0.37
alpha-Endosulfan	μg/Kg	0.974 NJ	0.15 J	0.054 J	0.0267 U	0.23 U	0.22 U	0.0556 U	0.049 J	NA	0.03 U	0.03 U	0.04 U	NA	0.0523 U	0.19 U	0.21 U	0.15 NJ	0.38	0.0283 U		
beta-Endosulfan	µg/Kg	0.0494 U	0.22 U	0.0366 U	0.049 U	0.21 U	0.27 U	0.0464 U	0.0374 U	NA	0.03 U	0.03 U	0.03 U	NA	0.0436 U	0.15 U	0.2 U	0.031 U	0.21 U	0.0236 U		
Dieldrin	µg/Kg	0.315 J	0.035 U	0.078 U	0.0475 U	0.53 J	0.73 U	0.385 NJ	0.0796 U	NA	0.05 U	0.06 U	0.06 U	NA	0.218 J	0.037 U	0.43	0.03 U	0.25 U	0.0504 U	61.8	0.0081
Endosulfan sulfate Endrin	µg/Kg	0.768 NJ 0.0816 UJ	0.24 U 0.083 U	0.113 U NA	0.0686 UJ 0.0368 U	0.25 U 0.18 U	0.2 U 0.2 U	0.143 UJ 0.0766 UJ	0.115 U R	NA NA	0.08 U NA	0.08 U 0.04 U	0.09 U 0.05 U	NA NA	0.134 UJ 0.072 U	0.25 U 0.25 U	0.26 U 0.071 U	0.49 U 0.071 U	0.21 U 0.28 U	0.0726 U NA	207	
Endrin aldehyde	μg/Kg μg/Kg	0.0816 UJ	0.049 U	0.0666 U	0.0308 U 0.0406 U	0.18 U 0.25 U	0.2 U 0.58 U	0.0843 U	0.0679 U	NA	0.05 U	0.04 U 0.05 U	0.05 U	NA	0.072 U 0.0793 U	0.25 U 0.19 U	0.071 U 0.2 U	0.071 U 0.2 U	0.28 U 0.21 U	0.043 U		
Endrin ketone	µg/Kg	0.0605 U	0.27 U	0.464 NJ	0.0273 U	0.19 U	0.51 U	0.0568 U	0.811 NJ	NA	0.28999	0.03 U	0.04 U	NA	0.0534 U	0.38 J	0.2 U	0.33 J	0.38 U	0.826 NJ		
Heptachlor	µg/Kg	0.0625 U	0.089 U	0.0464 U	0.0282 U	0.25 U	1.1 U	0.683 NJ	0.061 J	NA	0.03 U	0.03 U	0.04 U	NA	0.0552 U	0.093 U	0.12 U	0.076 U	0.21 U	0.0299 U	10	
Heptachlor epoxide Methoxychlor	µg/Kg	0.0816 U 1.22 J	0.24 U 0.46 U	0.0605 U 0.279 J	0.0368 U 0.0367 U	0.28 U 0.092 U	0.93 U 1.1 U	0.0766 U 0.0763 UJ	0.0617 U 3.18 J	NA NA	0.04 U 0.04 U	0.04 U 0.04 U	0.05 U 0.05 U	NA NA	0.072 U 0.0718 U	0.25 U 0.092 U	0.23 NJ 0.6 U	0.2 U 0.39 U	0.41 U 1.1 U	0.039 U 0.0389 U		
Mirex	μg/Kg μg/Kg	0.0738 U	0.46 U 0.14 U	0.0548 U	0.0334 U	0.092 U 0.15 U	0.12 U	0.0693 U	0.0558 U	NA	0.04 U 0.04 U	0.04 U 0.04 U	0.03 U 0.04 U	NA	0.365 NJ	0.092 U 0.15 U	0.0 U 0.12 U	0.12 U	0.13 U	0.0353 U		
Toxaphene	µg/Kg	19 U	26 U	14 U	9 U	28 U	44 U	18.2 U	14.6 U	NA		11 U	12 U	NA	17.1 U	29 U	11 U	17 U	47 U	9 U		
Polychlorinated Biphenyl Congeners																						
Estimated Total PCBs ⁽⁸⁾	µg/Kg	NA	12.7 J	NA	NA	20.8 J	68.3 JT	23.7	201	NA	NA	NA	NA	NA	NA	12.3 J	25.6	22.6 J	143	NA	676	0.39
Polychlorinated Biphenyls (PCBs)							· · · · · · · · ·	,			· · · ·		·									
Aroclor 1016	µg/Kg	2.5 U 4.7 U	9.2 U 4.9 U	3.8 U	1.2 U	13 U	1.3 U	4.8 UJ 4.8 UJ	5.7 U	100 U	4 U	2.74 U	1.54 U	100 U 200 U	2.2 U	1.6 U	1.3 U	1.3 U	5.1 U	25 U	530	
Aroclor 1221 Aroclor 1232	μg/Kg μg/Kg	4.7 U 4.2 U	4.9 U 18 U	7 U 6.3 U	2.2 U 2 U	3.3 U 25 U	1.3 U 1.3 U	4.8 UJ 4.8 UJ	11 U 9.6 U	200 U 100 U	7.4 U 6.7 U	5.08 U 4.59 U	2.85 U 2.58 U	200 U 100 U	4.2 U 3.8 U	1.6 U 1.6 U	1.3 U 1.3 U	1.3 U 1.3 U	5.1 U 5.1 U	47 U 42 U		
Aroclor 1232 Aroclor 1242	μg/Kg μg/Kg	4.2 U 2.6 U	5.4 U	3.9 U	1.2 U	8 U	8.6 NJ	4.8 UJ	5.8 U	100 U	4.1 U	4.39 U 2.79 U	1.57 U	100 U	2.2 U	2.1 J	3.8 NJ	3.5	8.8 J	42 U 26 U		
Aroclor 1248	µg/Kg	36	1.6 U	55	15	1.6 U	1.3 U	4.8 UJ	72	100 U	97	77.9	15.9	1080	39	1.6 U	1.3 U	1.3 U	5.1 U	380	1500	
Aroclor 1254	µg/Kg	1.5 U	5.3 J	2.3 U	2.3 UJ	12	31 J	4.8 UJ	3.5 U	100 U	2.4 U	20.3	7.29	100 U	1.4 U	6.4 J	12	11 J	15	15 U	300	
Aroclor 1260 Aroclor 1262	µg/Kg	5.5 2.4 U	7.9 1.6 U	18 3.5 U	2.3 UJ 2.3 UJ	7.9 1.6 U	29 J 1.3 U	4.8 UJ 4.8 UJ	15 5.3 U	100 U NA	14 3.8 U	3.39 2.56 U	4.6 1.44 U	160 NA	19 2.1 U	6.1 J 1.6 U	8.7 1.3 U	8.2 J 1.3 U	12 J 5.1 U	52 23 U	200	
Aroclor 1262 Aroclor 1268	μg/Kg μg/Kg	2.4 U 2 U	1.6 U	3.5 U 3 U	2.3 UJ 2.3 UJ	1.6 U	1.3 U	4.8 UJ 4.8 UJ	4.6 U	NA	3.2 U	2.56 U 2.2 U	1.44 U 1.24 U	NA	2.1 U 1.8 U	1.6 U	1.3 U 1.3 U	1.3 U	5.1 U	23 U 20 U		
	PP- 135		1.0 -		2.5 55																+	
Estimated Total PCBs ⁽⁸⁾	µg/Kg	42	13 J	73	15	20	69 NJ	ND	87	ND	111	102	27.8	1240	58	15 J	25 J	23 J	36 J	432	676	0.39

Table B-2 Inriver Sediment Samples Downriver from Outfall 53A

											Downriver											
Location (ft from O	F along shore)	275' down	350' down	400' down	450' down	550'	down	700' down	1000' down	1150' down		1250' down		1275' down	1400' down		1450'	down		1575' down		
	(ft offshore)	275' offshore	475' offshore	150' offshore	125' offshore	250' o	ffshore	300' offshore	100' offshore	on shore		125' offshore		on shore	150' offshore		325' ot	ffshore		60' offshore		
	Study	LWG Round 2	LWG Round 3	LWG Round 2	LWG Round 2	LWG Round 3	LWG Round 3	LWG Round 2	LWG Round 2	OSM Pre-RI	LWG Round 2	LWG Round 2	LWG Round 2	OSM Pre-RI	LWG Round 2	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 2		
	Sample Type	Surface	Surface	Surface	Surface	Surface	Subsurface	Surface	Surface	Beach	Surface	Subsurface	Subsurface	Beach	Surface	Surface	Subsurface	Subsurface	Subsurface	Surface		JSCS ⁽¹⁾
	Sample ID	LW2-G032	LW3-G607 ⁽²⁾	LW2-G031	LW2-B006	LW3-G608	LW3-C608-B	LW2-G030	LW2-G028	38012-3801	LW2-G027	LW2-C027b	LW2-C027c	38011-3801	LW2-G026	LW3-G605	LW3-C605-B	LW3-C605-C	LW3-C605-D	LW2-G025	G	JSCS ning Level Value
	Sample Date	7/23/2004	11/27/2007	8/4/2004	7/28/2004	11/27/2007	1/2/2008	7/23/2004	8/4/2004	10/10/2000	7/26/2004	9/29/2004	9/29/2004	10/10/2000	7/20/2004	11/27/2007	12/12/2007	12/12/2007	12/12/2007	7/26/2004	Scree	ling Level value
	Depth	0-28 cm	0-30 cm	0-29 cm	0-15 cm	0-30 cm	30-152 cm	0-28 cm	0-29 cm	0-10 cm	0-26 cm	30-150 cm	150-249 cm	0-10 cm	0-28 cm	0-30 cm	30-151 cm	151-273 cm	273-341 cm	0-19 cm	(Toxicity)	(Bioaccumulation)
Class Analyte	Units ⁽³⁾																					
Phthalates																						
Bis(2-ethylhexyl) phthalate	µg/Kg	87 U	180	90	6.4 U	140	76	110 U	38	200	28 U	11	10	200 U	110	130	52	90 J	57	160	800	330
Butylbenzyl phthalate	µg/Kg	4 U	19 U	19	1.8 U	20 U	3.2 U	3.9 U	3.1 U	20	2.3 U	2.2 U	2.2 U	20 U	8.2 J	13	6.4 U	16 U	3.3 U	7 U		
Dibutyl phthalate Diethyl phthalate	µg/Kg	8.2 J 9.2 U	46 U 9.7 J	9.2 J 7.5 U	3.1 U 4.2 U	49 U 8.9 J	11 3.1 J	6.8 U 9.1 U	5.3 U 7.1 U	20	3.9 U 5.3 U	3.8 U 5.2 U	3.8 U 5.1 U	20 U 9.9 U	6.6 J 8.3 U	25 4.7 J	20 J 3.5 J	40 U 6.5 U	16 1.4 U	12 U 17 U	100 600	60
Dimethyl phthalate	μg/Kg μg/Kg	4.7 U	5.9 U	3.9 U	4.2 U 2.2 U	6.2 U	1 U	4.7 U	3.7 U	9.9	2.7 U	2.7 U	2.6 U	9.9 U 9.9 U	4.3 U	1.3 U	2 U	5 U	1.4 U	8.3 U		
Di-n-octyl phthalate	μg/Kg	3.2 U	9.9 U	2.6 U	1.5 U	11 U	1.7 U	3.2 U	2.5 U	200 U	1.8 U	1.8 U	1.8 U	200 U	2.9 U	2.1 U	3.4 U	8.5 U	1.8 U	5.6 U		
Polycyclic Aromatic Hydrocarbons (PAHs)									· · · · · ·			•										
1-Methylnaphthalene	µg/Kg	NA	2.8 J	NA	NA	21	180	NA	2.1 J	1.9 J	4.4	2.5 J	NA									
2-Methylnaphthalene	µg/Kg	4.7	4.9	2.1 J	0.51 J	36	130	3.2 J	3	9.9 U	1.3	2.6	2.6	9.9 U	3.3	3.2	3.1	7.3	4.3	7.9	200	
Acenaphthene	µg/Kg	25	6.7	3.4	0.24 J	130	1300	3.7	7	9.9 U	0.86	8.2	9	9.9 U	3.4	3.3	5.2	18	7.5	13	300	
Acenaphthylene Anthracene	μg/Kg	10 25	6.3 15	5.1 9.5	0.75 J 0.68 J	13 89	8.4	3.9 6.5	7 8.3	9.9 U 9.9 U	1.6	7.4 24	1.9 4.7	9.9 U 9.9 U	4.5 8.3	3.8 9.7	2.8	5.4	4.2 8.4	11 25	200 845	
Benzo(a)anthracene	μg/Kg μg/Kg	82	44	28	1.8 J	280	150	25	8.5 34	9.9 U 9.9 U	13	47	9.9	9.9 U 9.9 U	25	30	33	56	37	100	1050	
Benzo(a)pyrene	μg/Kg μg/Kg	75	62	39	1.3 J	190	93	NA	NA	9.9 U	19	42	8.7	9.9 U	39	39	47	72	46	120	1450	
Benzo(e)pyrene	μg/Kg	NA	67	NA	NA	320	140	36	48	NA	NA	NA	NA	NA	NA	48	55	94	62	NA		
Benzo(b)fluoranthene	µg/Kg	150	44	57	3.1	160	79	45	57	9.9 U	19	32	8.6	9.9 U	49	30	36	56	40	160		
Benzo(g,h,i)perylene	µg/Kg	55	56	36	1.6 J	100	64	36	42	20 U	17	28	7.8	20 U	38	35	42	64	38	110	300	
Benzo(k)fluoranthene Chrysene	μg/Kg	45 210	20 60	19 89	1.1 J 1.6 J	110 350	47 190	14 40	16 50	9.9 U 9.9 U	6.1 17	37 68	6.8 14	9.9 U 9.9 U	17 56	14 47	20 48	29 66	20 48	<u>56</u> 210	13000 1290	
Dibenz(a,h)anthracene	μg/Kg μg/Kg	9.1	6.9	5.9	0.31 U	19	130	40	5.8	20 U	3.2	4.5	0.92	20 U	6.1	4.7	5.9	10	6.4	19	1290	
Dibenzothiophene	μg/Kg	NA	4.6	NA	NA	33	92	NA	2.7 J	2.4 J	5.8	3.4	NA									
Fluoranthene	μg/Kg	830	100	70	3.7	1300	880	43	66	9.9 U	16	130	37	9.9 U	59	60	64	110	72	580	2230	37000
Fluorene	µg/Kg	35	5.8	3.4	0.33 J	120	760	3.1 J	5	9.9 U	0.68999	4.7	3.6	9.9 U	4.3	3.7	4.5	12	6.3	17	536	
Indeno(1,2,3-cd)pyrene	µg/Kg	49	51	36	1.2 J	110	71	29	39	20 U	14	27	6.2	20 U	35	30	43	67	39	100	100	
Naphthalene Perylene	µg/Kg	10 U NA	15 39	6.5 U NA	1.3 U NA	40 67	110 59	11 U NA	9.5 U NA	9.9 U NA	3.3 U NA	5.9 NA	5.2 NA	9.9 U NA	8.8 NA	9.9 23	9.3 49	23 80	15 36	16 NA	561	
Phenanthrene	μg/Kg μg/Kg	630	49	23	2.3 J	570	2000	21	33	9.9 U	5.5	72	24	9.9 U	23	30	32	67	43	170	1170	
Pyrene	μg/Kg	510	110	75	4.3	1000	650	53	74	9.9 U	18	130	32	9.9 U	63	65	68	110	72	460	1520	1900
High Molecular Weight PAH	μg/Kg	NA	580	NA	NA	3800	2300	NA	370	430	680	440	NA									
Low Molecular Weight PAH	µg/Kg	NA	100	NA	NA	1000	4600	NA	64	67	150	89	NA									
Estimated Total PAHs ⁽⁸⁾	µg/Kg	2750	680 J	500 J	25 J	4800	6900	370	500	ND	150	670	180	ND	440	440 J	490 J	830	530 J	2200		
Phenolic SVOCs			0.40.44	() Y	0.60.11	0.00 V	0.00 XX		50.11		0.07.11	0.05 11	0.04.11			0.50.11	0.42.44	0.41.44	0 41 Y			
2,3,4,5-Tetrachlorophenol 2,3,4,6;2,3,5,6-Tetrachlorophenol	µg/Kg	7.6 U	0.48 U	6.2 U	0.69 U	0.99 U	0.39 U	7.6 U	5.9 U	NA	0.87 U	0.85 U	0.84 U	NA	1.4 U	0.52 U	0.42 U	0.41 U	0.41 U	6.7 U		
coelution	µg/Kg	4.7 U	0.39 U	3.9 U	0.43 U	1.7 J	1.5 U	4.7 U	3.7 U	NA	0.54 U	0.53 U	0.52 U	NA	0.85 U	0.42 U	0.34 U	0.33 U	0.34 U	4.2 U		
2,4,5-Trichlorophenol	µg/Kg	3.8 U	1.3 U	3.1 U	0.35 U	1.4 U	3.6 U	3.8 U	3 U	50 U	0.44 U	0.43 U	0.6 U	500 U	0.69 U	1.4 U	1.1 U	2.2 U	6 U	3.4 U		
2,4,6-Trichlorophenol	μg/Kg	4.7 U	0.25 U	3.9 U	0.43 U	0.27 U	0.21 U	4.7 U	3.7 U	50 U	0.54 U	0.53 U	0.52 U	50 U	0.85 U	0.27 U	0.22 U	0.29 U	0.23 U	4.2 U		
2,4-Dichlorophenol	µg/Kg	4.7 U	5.9 U	3.9 U	2.2 U	6.2 U	1 U	4.7 U	3.7 U	99 U	2.7 U	2.7 U	2.6 U	99 U	4.3 U	1.3 U	2 U	5 U	1.1 U	8.3 U		
2,4-Dimethylphenol	µg/Kg	15 U	32 U	12 U	6.5 U	34 U	R 17 U	15 U	12 U	200 U	8.2 U	8.1 U	NA 52 U	200 U	13 U	6.8 U	R	R	5.6 U	26 U		
2,4-Dinitrophenol 2-Chlorophenol	μg/Kg μg/Kg	94 U 4,5 U	99 U 12 U	77 U 3.7 U	43 U 2 U	110 U 13 U	17 U 2 U	94 U 4.5 U	73 U 3.5 U	300 U 50 U	54 U 2.6 U	53 U 2.5 U	52 U 2.5 U	300 U 50 U	85 U 4.1 U	21 U 2.5 U	34 U 4 U	85 U 10 U	18 U 2.1 U	170 U 7.9 U		
2-Methylphenol	μg/Kg μg/Kg	4.5 U 8.9 U	8.8 U	7.3 U	4 U	9.2 U	1.5 U	4.5 U 8.9 U	6.9 U	200 U	5.1 U	2.5 U	2.5 U	200 U	4.1 U 8.1 U	1.9 U	3 U	7.5 U	1.6 U	16 U		
2-Nitrophenol	μg/Kg	6.8 U	8.8 U	5.6 U	3.1 U	9.2 U	1.5 U	6.8 U	5.3 U	50 U	3.9 U	3.8 U	3.8 U	50 U	6.2 U	1.9 U	3 U	7.5 U	1.6 U	12 U		
4,6-Dinitro-2-methylphenol	µg/Kg	4.5 U	8.2 U	3.7 U	2 U	8.6 U	1.4 U	4.5 U	3.5 U	200 U	2.3 U	2.5 U	2.5 U	200 U	4.1 U	1.8 U	2.8 U	7 U	1.5 U	7.9 U		
4-Chloro-3-methylphenol	µg/Kg	5.5 U	8.2 U	4.5 U	2.5 U	8.6 U	1.4 U	5.5 U	4.3 U	50 U	3.2 U	3.1 U	3.1 U	50 U	5 U	1.8 U	2.8 U	7 U	1.5 U	9.7 U		
4-Methylphenol 4-Nitrophenol	μg/Kg	7.6 U 79 U	8.8 U 110 U	430 64 U	3.5 U 36 U	9.2 U 110 U	9.9 18 U	12 J 78 U	200 61 U	NA 99 U	4.4 U 45 U	4.3 U 44 U	4.2 U 44 U	NA 99 U	15 71 U	8.6 J 22 U	9 J 36 U	13 J 90 U	31 19 U	14 U 140 U		
Pentachlorophenol	μg/Kg μg/Kg	79 U 5.1 U	0.37 U	4.2 U	0.46 U	57	2.9 J	5.1 U	4 U	300 U	0.58 U	0.57 U	0.57 U	300 U	0.92 U	0.4 U	3.3 U	3.3 J	5.8 U	4.5 U	1000	250
Phenol	μg/Kg μg/Kg	16 J	12 U	14 J	2.3 U	13 U	32 U	26 J	11 J	50 U	2.9 U	11 U	9.1 U	50 U	4.5 U	5.8 J	4 U	10 U	2.1 U	8.8 U	50	
Organonitrogen SVOCs																						
2,4-Dinitrotoluene	µg/Kg	7.3 U	8.8 U	6 U	3.3 U	9.2 U	1.5 U	7.3 U	5.7 U	50 U	4.2 U	4.1 U	4.1 U	50 U	6.7 U	1.9 U	3 U	7.5 U	1.6 U	13 U		
2,6-Dinitrotoluene	µg/Kg	7.3 U	12 U	6 U	3.3 U	13 U	2 U	7.3 U	5.7 U	20 U	4.2 U	4.1 U	4.1 U	20 U	6.7 U	2.5 U	4 U	10 U	2.1 U	13 U		
2-Nitroaniline 3-Nitroaniline	µg/Kg	7.1 U 6.8 U	19 U 15 U	5.8 U 5.6 U	3.2 U 3.1 U	20 U 16 U	3.2 U 2.5 U	7 U 6.8 U	5.5 U 5.3 U	20 U 200 U	4.1 U 3.9 U	4 U 3.8 U	3.9 U 3.8 U	20 U 200 U	6.4 U 6.2 U	4 U 3.1 U	6.4 U 5 U	16 U 13 U	3.3 U 2.6 U	13 U 12 U		
4-Chloroaniline	μg/Kg μg/Kg	5.5 U	13 U 12 U	4.5 U	2.5 U	16 U 12 U	1.9 U	5.5 U	4.3 U	200 U 50 U	3.9 U 3.2 U	3.8 U 3.4 U	3.8 U 3.1 U	200 U 50 U	6.2 U 5 U	2.4 U	3.8 U	9.5 U	2.6 U 2 U	9.7 U		
4-Nitroaniline	μg/Kg μg/Kg	8.9 U	11 U	7.3 U	4 U	11 U	1.8 U	8.9 U	6.9 U	9.9 U	5.1 U	5 U	5 U	9.9 U	8.1 U	2.4 U	3.6 U	9 U	1.9 U	16 U		
Aniline	μg/Kg	4 U	8.8 U	3.2 U	1.8 U	9.2 U	R	3.9 U	3.1 U	NA	2.3 U	2.2 U	2.2 U	NA	3.6 U	1.9 U	3 U	7.5 U	1.6 U	7 U		
Carbazole	µg/Kg	20	7.6 U	11	1.6 U	19 J	53	5.8 J	3.9 J	9.9 U	2 U	5.9	1.9 U	9.9 U	4.8 J	3.1 J	4.4 J	9 J	1.4 U	14 J	1600	
Nitrobenzene N Nitroso dimethylomine	µg/Kg	5.3 U	13 U	4.3 U	2.4 U	14 U	2.2 U	5.2 U	4.1 U	9.9 U	3 U	3 U	2.9 U	9.9 U	4.8 U	2.7 U	4.4 U	11 U	2.3 U	9.3 U		
N-Nitrosodimethylamine N-Nitrosodiphenylamine	μg/Kg	16 U 5.8 U	36 U 9.3 U	14 U 4.7 U	7.2 U 2.6 U	38 U 9.8 U	6.1 U 1.6 U	16 UJ 5.7 U	13 U 4.5 U	NA 9.9 U	9.1 U 3.3 U	9 U 3.3 U	8.9 U 3.2 U	NA 9.9 U	15 U 5.2 U	7.5 U 2 U	13 U 3.2 U	31 U 8 U	6.2 U 1.7 U	29 U 11 U		
N-Nitrosodipropylamine	μg/Kg μg/Kg	5.8 U 8.4 U	9.3 U 14 U	4.7 U 6.9 U	2.6 U 3.8 U	9.8 U 15 U	2.4 U	8.3 U	4.5 U 6.5 U	9.9 U 9.9 U	3.3 U 4.8 U	4.7 U	4.7 U	9.9 U 9.9 U	5.2 U 7.6 U	2 U 3 U		12 U	2.5 U	11 U 15 U		
тетниозоспроруганиис	μg/ Ng	0.4 U	14 U	0.7 U	5.0 U	15 0	2.4 U	0.5 U	0.5 0	7.7 U	4.0 U	4.7 U	4.7 U	7.7 U	7.0 0	50	4.0 U	12.0	2.3 0	15 0	1	

Table B-2 Inriver Sediment Samples Downriver from Outfall 53A

											Downriver											
Location (ft from	OF along shore)	275' down	350' down	400' down	450' down	550'	down	700' down	1000' down	1150' down		1250' down		1275' down	1400' down		1450'	down		1575' down		
	(ft offshore)	275' offshore	475' offshore	150' offshore	125' offshore	250' c	offshore	300' offshore	100' offshore	on shore		125' offshore		on shore	150' offshore		325' 0	ffshore		60' offshore	1	
	Study	LWG Round 2	LWG Round 3	LWG Round 2	LWG Round 2	LWG Round 3	LWG Round 3	LWG Round 2	LWG Round 2	OSM Pre-RI	LWG Round 2	LWG Round 2	LWG Round 2	OSM Pre-RI	LWG Round 2	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 2	1	
	Sample Type	Surface	Surface	Surface	Surface	Surface	Subsurface	Surface	Surface	Beach	Surface	Subsurface	Subsurface	Beach	Surface	Surface	Subsurface	Subsurface	Subsurface	Surface		(1)
	Sample ID	LW2-G032	LW3-G607 ⁽²⁾	LW2-G031	LW2-B006	LW3-G608	LW3-C608-B	LW2-G030	LW2-G028	38012-3801	LW2-G027	LW2-C027b	LW2-C027c	38011-3801	LW2-G026	LW3-G605	LW3-C605-B	LW3-C605-C	LW3-C605-D	LW2-G025		JSCS ⁽¹⁾
	Sample Date	7/23/2004	11/27/2007	8/4/2004	7/28/2004	11/27/2007	1/2/2008	7/23/2004	8/4/2004	10/10/2000	7/26/2004	9/29/2004	9/29/2004	10/10/2000	7/20/2004	11/27/2007	12/12/2007	12/12/2007	12/12/2007	7/26/2004	Screer	ning Level Value
	Depth	0-28 cm	0-30 cm	0-29 cm	0-15 cm	0-30 cm	30-152 cm	0-28 cm	0-29 cm	0-10 cm	0-26 cm	30-150 cm	150-249 cm	0-10 cm	0-28 cm	0-30 cm	30-151 cm	151-273 cm	273-341 cm	0-19 cm	(Toxicity)	(Bioaccumulation)
Class Analyte	Units ⁽³⁾			,					,											,	(Toxicity)	(Diduccumulation)
Halogenated SVOCs	Units																					
1,2,4-Trichlorobenzene	µg/Kg	4 U	16 U	3.2 U	1.8 U	16 U	2.6 U	3.9 U	3.1 U	9.9 U	2.3 U	2.2 U	2.2 U	9.9 U	3.6 U	3.2 U	5.2 U	13 U	2.7 U	7 U	9200	
1.2-Dichlorobenzene	μg/Kg μg/Kg	3.4 U	10 U	2.8 U	1.6 U	10 U	2.0 U	3.9 U 3.4 U	2.7 U	9.9 U	2.3 U	1.9 U	1.9 U	9.9 U	3.1 U	3.2 U 3.6 U	5.8 U	15 U	2.7 U 3 U	6 U	1700	
1.3-Dichlorobenzene	μg/Kg μg/Kg	4.2 U	17 U	3.5 U	1.0 U	10 U	3 U	4.2 U	3.3 U	9.9 U	2.4 U	2.4 U	2.4 U	9.9 U	3.8 U	3.0 U	6 U	15 U	3.1 U	7.4 U	300	
1.4-Dichlorobenzene	ug/Kg	5 U	10 U	4.1 U	2.3 U	19 U	2.9 U	5 U	3.9 U	9.9 U	2.9 U	2.8 U	2.8 U	9.9 U	4.5 U	3.6 U	5.8 U	15 U	3 U	8.8 U	300	
2-Chloronaphthalene	μg/Kg	9.4 U	9.3 U	7.7 U	4.3 U	9.8 U	1.6 U	9.4 U	7.3 U	9.9 U	5.4 U	5.3 U	5.2 U	9.9 U	8.5 U	2 U	3.2 U	8 U	1.7 U	17 U		
3,3'-Dichlorobenzidine	μg/Kg	9.7 U	22 U	7.9 U	4.4 U	23 U	3.7 U	9.6 U	7.5 U	70 U	5.5 U	5.5 U	5.4 U	70 U	8.8 U	4.6 U	7.4 U	19 U	3.8 U	18 U		
4-Bromophenyl phenyl ether	µg/Kg	3.7 U	9.3 U	3 U	1.7 U	9.8 U	1.6 U	3.7 U	2.9 U	NA	NA	NA	NA	NA	3.4 U	2 U	3.2 U	8 U	1.7 U	6.5 U		
4-Chlorophenyl phenyl ether	µg/Kg	5.3 U	8.2 U	4.3 U	2.4 U	8.6 U	1.4 U	5.2 U	4.1 U	9.9 U	3 U	3 U	2.9 U	9.9 U	4.8 U	1.8 U	2.8 U	7 U	1.5 U	9.3 U		
Azobenzene	µg/Kg	6.3 U	6.4 U	5.2 U	2.9 U	6.8 U	1.1 U	6.3 U	4.9 U	NA		3.6 U	3.5 U	NA	5.7 U	1.4 U	2.2 U	5.5 U	1.2 U	12 U		
Bis(2-chloroethoxy) methane	µg/Kg	3.4 U	8.8 U	2.8 U	1.6 U	9.2 U	1.5 U	3.4 U	2.7 U	20 U	2 U	1.9 U	1.9 U	20 U	3.1 U	1.9 U	3 U	7.5 U	1.6 U	6 U		
Bis(2-chloroethyl) ether	µg/Kg	6.3 U	12 U	5.2 U	2.9 U	12 U	1.9 U	6.3 U	4.9 U	9.9 U	3.6 U	3.6 U	3.5 U	9.9 U	5.7 U	2.4 U	3.8 U	9.5 U	2 U	12 U		
Bis(2-chloroisopropyl) ether	µg/Kg	3.2 U	16 U	2.6 UJ	1.5 U	16 U	2.6 U	3.2 U	2.5 UJ	9.9 U	1.8 U	1.8 U	1.8 U	9.9 U	2.9 U	3.2 U	5.2 U	13 U	2.7 U	5.6 U		
Hexachlorobenzene	µg/Kg	5.5 U	0.24 U	0.327 J	2.5 UT	0.25 U	0.31 J	5.5 U	0.15 J	9.9 U	0.02 U	3.1 U	3.1 U	9.9 U	5 U	0.25 U	0.2 U	0.068 U	0.43 J	0.0176 U	100	19
Hexachlorobutadiene	µg/Kg	0.071 U	0.17 U 170 U	0.0527 U	0.0321 UT	1.1 J	0.14 U 29 U	0.0667 U	0.0537 U	9.9 U 200 U	0.04 U 23 U	0.01 U 22 U	0.04 U	9.9 U 200 U	0.0627 UJ	0.18 U 36 U	0.14 U 58 U	0.14 U 150 U	0.34 U 30 U	0.034 U	600	
Hexachlorocyclopentadiene Hexachloroethane	µg/Kg	40 U 0.105 UJ	0.19 U	32 U 0.0779 UJ	18 U 0.0474 UJT	180 U 0.2 U	0.45 U	39 U 0.0986 UJ	31 U 0.0794 UJ	200 U 40 U	0.05 U	0.03 U	22 U 0.06 U	200 U 40 U	36 U 0.0927 UJ	0.2 U	0.16 U	0.16 U	0.17 U	70 U 0.951 J	400	
Oxygen-Containing SVOCs	µg/Kg	0.105 UJ	0.19 0	0.0779 UJ	0.0474 UJ1	0.2 0	0.45 U	0.0980 UJ	0.0794 UJ	40 0	0.05 0	0.03 U	0.00 U	40 U	0.0927 UJ	0.2 0	0.10 U	0.10 U	0.17 U	0.951 J		
Benzoic acid	µg/Kg	250 U	560 U	210 U	120 U	590 U	140 J	250 U	200 U	400 U	150 U	150 U	140 U	400 U	230 U	120 U	260 J	480 U	120 J	450 U		
Benzyl alcohol	μg/Kg μg/Kg	9.7 U	13 U	10 J	4.4 U	13 U	7.7 J	9.6 U	7.7 J	50 U	5.5 U	9.7	5.4 U	50 U	8.8 U	6.6 J	7.8 J	11 U	2.2 U	18 U		
Dibenzofuran	μg/Kg	19	3 J	2 J	0.31 J	81	490	2.1 J	3	9.9 U	0.44 U	1.5	2.4	9.9 U	2.3 J	2.2 J	2.3 J	6.6	3.8	8.6		
Isophorone	μg/Kg	4.2 U	5.9 U	3.5 U	1.9 U	6.2 U	1 U	4.2 U	3.3 U	9.9 U	2.4 U	2.4 U	2.4 U	9.9 U	3.8 U	1.3 U	2 U	5 U	1.1 U	7.4 U		
Total Petroleum Hydrocarbons (TPH)		•	•	•	•	•				•					•		•	•		•	1	
Diesel Range Hydrocarbons	mg/Kg	NA	. 64 J	NA	NA	89 J	220 J	NA	NA	NA	18000	24000	14000	NA	94 J	67 J	83 J	170 J	220 J	19 J		
Gasoline Range Hydrocarbons	mg/Kg	NA	. NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	2.5 U	NA	NA			1.3 UJ		
Residual Range Hydrocarbons	mg/Kg	NA	. 440 J	NA	NA	510 J	630 J	NA	NA	NA	. NA	NA	NA	NA	460 J	460 J	400 J	590 J	690 J	120 J		
NOTES;																						

<u>NOTES;</u> J = Estimate

A = Total value based on limited number of analytes NA = Not analyzed ND = Not detected

NJ = Estimate, presumptive evidence of presence of material

T = Value is an average or selected result, numerical value was mathematically derived

U = The analyte was not detected above the reported sample quantification limit.

U = Not detected, and the detection limit is an estimate-- No JSCS screening level available $<math>\mu g/Kg = Micrograms per kilogram$

mg/Kg = Milligrams per kilogram

⁽¹⁾ JSCS - Portland Harbor Joint Source Control Strategy (DEQ/EPA Final December 2005, Amended July 2007)

 $^{\left(2\right) }$ Additional dioxin congener and homolog data is available for this sample

⁽³⁾ All results reported on a dry-weight basis

 $^{\rm (4)}$ Totals for DDD, DDE, and DDT are the sum of the 2,4' and 4,4' isomers

⁽⁵⁾ Estimated Total DDx is sum of DDD, DDE and DDT

⁽⁶⁾ Alpha-chlordane is also known as cis-Chlordane. Beta-Chlordane is also known as trans-chlordane and gamma-chlordane.

 $^{(7)}$ Total Chlordane is the sum of alpha-, beta-, oxy- isomers and cis-, trans-nonachlors

⁽⁸⁾ Totals are calculated by assigning "0" to undetected constituents
 = concentration exceeds JSCS Toxicity Screening Level Value
 bold = concentration exceeds JSCS Bioaccumulation Screening Level Value

				Upst	10.0m		Outfall					Downstream						
	Location (ft from 0	OF along shore)		175			50' down	350' down	550'	down	700' down	1000' down		1450'	down			
	Elocation (it from C	(ft offshore)		225' of			75' offshore	475' offshore		ffshore	300' offshore	1000 down 100' offshore	1		ffshore			
		(It offshole) Study	LWG Round 3	1 1		LWC Dound 2	LWG Round 2	LWG Round 3	LWG Round 3		LWG Round 2	LWG Round 2	LWG Round 3	1	I	LWG Round 3		
		Sample Type	Surface	Subsurface	Subsurface	Subsurface	Surface	Surface	Surface	Subsurface	Surface	Surface	Surface	Subsurface	Subsurface	Subsurface	-	
		Sample Type Sample ID	LW3-G609	LW3-C609-B	LW3-C609-C	LW3-C609-D	LW2-G038	LW3-G607	LW3-G608	LW3-C608-B	LW2-G030	LW2-G028	LW3-G605	LW3-C605-B	LW3-C605-C	LW3-C605-D		JSCS ⁽¹⁾
		Sample ID	11/28/2007	12/13/2007	12/13/2007	12/13/2007	9/8/2004	11/27/2007	11/27/2007	1/2/2008	7/23/2004	8/4/2004	11/27/2007	12/12/2007	12/12/2007	12/12/2007	Scree	ening Level Value
		Depth	0-25 cm	30-151 cm	151-273 cm	273-311 cm	0-26 cm	0-30 cm	0-30 cm	30-152 cm	0-28 cm	0-29 cm	0-30 cm	30-151 cm	151-273 cm	273-341 cm	(Toxicity)	(Bioaccumulation)
IUPAC Number ⁽²	2) Chemical Name	Units ⁽³⁾	0 20 0111	50 101 cm	101 270 011	270 011 011	0 20 011	0.00 th	0.0000	50 102 011	0 20 011	0 2) tin	0.00 011	50 101 011	101 270 011	270 011 011	(Toxicity)	(Dioaccumulation)
	l Congeners (EPA 1668A)	Units																
PCB 1	2-MoCB	µg/Kg	0.0638	0.0272	0.00499 U	0.00494 U	1.05	0.00933	0.0257	0.0271 T	0.0127 J	0.0187 J	0.00877	0.0126	0.0130	0.0909		
PCB 2	3-MoCB	μg/Kg μg/Kg	0.0327 J	0.0155	0.00499 0	0.00494 U	0.0294	0.0146	0.0237	0.0257 T	0.0127 J	0.0174	0.0121	0.0120	0.0220	0.0247		
PCB 3	4-MoCB	μg/Kg	0.0772	0.0336	0.00871	0.00494 U	0.127	0.00829	0.0162	0.0282 T	0.0128 J	0.0200 J	0.00761	0.0124	0.0157	0.0773		
PCB 4/10	2,2'-DiCB + 2,6-DiCB	µg/Kg	0.0892 J	0.0780	0.00997 U	0.00988 U	3.58	0.0335	0.149	0.0700 T	0.0582 J	0.124	0.0418	0.0380	0.0460	0.322		
PCB 5/8	2,3-DiCB + 2,4'-DiCB	µg/Kg	0.351	0.450	0.0221	0.00988 U	3.42	0.0800	0.179	0.227 T	0.154 J	0.487	0.0790	0.134	0.111	0.840		
PCB 6	2,3'-DiCB	µg/Kg	0.0688 J	0.0601	0.00997 U	0.00988 U	1.67	0.0176	0.0524	0.0556 T	0.0409 J	0.0974	0.0197	0.0289	0.0317	0.186		
PCB 7/9 PCB 11	2,4-DiCB + 2,5-DiCB 3,3'-DiCB	μg/Kg μg/Kg	0.0431 J 0.0992 U	0.0271 0.0624	0.00997 U 0.0110	0.00988 U 0.00988 U	0.369 0.0674	0.00978 U 0.195	0.0130	0.0259 T 0.156 T	0.0155 J 0.217 J	0.0406	0.00968 U 0.211	0.0127 0.140	0.0109 0.199	0.0987 0.0517		
PCB 12/13	3,3-DICB 3.4-DiCB + 3.4'-DiCB	μg/Kg μg/Kg	0.0992 U 0.0521 J	0.0024	0.00997 U	0.00988 U	0.239	0.195	0.0203	0.130 T 0.0383 T	0.0289 J	0.0489	0.00973	0.140	0.199	0.0885		
PCB 14	3,5-DiCB	μg/Kg μg/Kg	0.0992 U	0.00995 U	0.00997 U	0.00988 U	0.00491 U	0.00978 U	0.00976 U	0.00971 UT	0.00953 UJ	0.0251 U	0.00968 U	0.00991 U	0.0101 U	0.00978 U		
PCB 15	4,4'-DiCB	μg/Kg	0.163	0.204	0.0133	0.00988 U	1.91	0.0798	0.143	0.259 T	0.175 J	0.476	0.0859	0.156	0.135	0.666		
PCB 16/32	2,2',3-TriCB + 2,4',6-TriCB	µg/Kg	0.534	0.479	0.0292	0.00573	0.988	0.0831	0.142	0.357 T	0.171 J	2.21	0.0813	0.180	0.156	1.36		
PCB 17	2,2',4-TriCB	µg/Kg	0.395	0.441	0.0211	0.00494 U	0.589	0.0598	0.0999	0.284 T	0.109 J	1.31	0.0581	0.106	0.107	1.15		
PCB 18 PCB 19	2,2',5-TriCB 2,2',6-TriCB	µg/Kg	0.557 0.0651	0.579 0.0581	0.0414 0.00499 U	0.00588 0.00494 U	1.38 0.318	0.119 0.0361	0.182 0.0527	0.437 T 0.0479 T	0.233 J 0.0446 J	3.64 0.205	0.115 0.0300	0.226	0.220 0.0313	2.24 0.185		
PCB 20/21/33	2.3.3'-TriCB + 2.3.4-TriCB + 2'.3.4-TriCB	μg/Kg μg/Kg	0.668	0.0381	0.0697	0.00523	1.53	0.0301	0.0327	0.465 T	0.0446 J	2.75	0.0300	0.0394	0.0313	1.39		
PCB 22	2,3,4'-TriCB	μg/Kg μg/Kg	0.349	0.241	0.0288	0.00323 0.00494 U	1.16	0.0862	0.123	0.405 T	0.161 J	1.96	0.0833	0.169	0.121	0.866		
PCB 23	2,3,5-TriCB	μg/Kg	0.0496 U	0.00498 U	0.00499 U	0.00494 U	0.00257	0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.00420 J	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 24/27	2,3,6-TriCB + 2,3',6-TriCB	µg/Kg	0.0526	0.0499	0.00499 U	0.00494 U	0.139	0.0140	0.0237	0.0451 T	0.0245 J	0.196	0.0132	0.0221	0.0205	0.162		
PCB 25	2,3',4-TriCB	µg/Kg	0.133	0.0926	0.0114	0.00494 U	0.420	0.0286	0.0415	0.106 T	0.0471 J	0.254	0.0278	0.0454	0.0458	0.233		
PCB 26	2,3',5-TriCB	µg/Kg	0.207	0.136	0.0174	0.00494 U	0.654	0.0415	0.0693	0.150 T	0.0776 J	0.617	0.0466	0.0773	0.0741	0.403		
PCB 28 PCB 29	2,4,4'-TriCB 2,4,5-TriCB	µg/Kg	1.69 0.0496 U	1.45 0.00498 U	0.110 0.00499 U	0.0105 0.00494 U	3.46 0.0210	0.264 0.00489 U	0.444 0.00488 U	1.37 T 0.00485 UT	0.605 J 0.00476 UJ	6.33 0.0151	0.257 0.00484 U	0.658 0.00495 U	0.513 0.00503 U	3.60 0.00897		
PCB 30	2,4,5-TriCB	μg/Kg μg/Kg	0.0496 U	0.00498 U	0.00499 U	0.00494 U	0.00245 U	0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0131 0.0126 U	0.00484 U	0.00495 U	0.00503 U	0.00397 0.00489 U		
PCB 31	2,4',5-TriCB	μg/Kg	1.39	0.976	0.0937	0.00918	2.71	0.237	0.340	0.855 T	0.364 J	5.67	0.217	0.474	0.342	2.58		
PCB 34	2',3,5-TriCB	μg/Kg	0.0250 J	0.0154	0.00499 U	0.00494 U	0.0154	0.00489 U	0.00488 U	0.0177 T	0.00476 UJ	0.0345	0.00484 U	0.00495 U	0.00526	0.0426		
PCB 35	3,3',4-TriCB	µg/Kg	0.0254 J	0.0182	0.00499 U	0.00494 U	0.0790	0.00595	0.00843	0.0221 T	0.0108 J	0.0340	0.00484 U	0.0119	0.00870	0.0401		
PCB 36	3,3',5-TriCB	μg/Kg	0.0496 U	0.00498 U	0.00499 U	0.00494 U	0.00245 U	0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0126 U	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 37 PCB 38	3,4,4'-TriCB 3,4,5-TriCB	µg/Kg	0.418 0.0186 J	0.260 0.00824	0.0260 0.00499 U	0.00494 U 0.00494 U	1.37 0.0132	0.102 0.00489 U	0.169 0.00658	0.432 T 0.0150 T	0.219 J 0.00533 J	1.46 0.0710	0.0981 0.00484 U	0.316	0.175 0.0093	0.914 0.0735		
PCB 39	3,4',5-TriCB	μg/Kg μg/Kg	0.0170 J	0.0135	0.00499 U	0.00494 U	0.00472	0.00489 U	0.00038 0.00488 U	0.0130 T	0.00476 UJ	0.00907 J	0.00484 U	0.00495 U	0.00504	0.0733		
PCB 40	2,2',3,3'-TeCB	μg/Kg	0.301	0.197	0.0230	0.00494 U	0.197	0.0404	0.0819	0.245 T	0.100 J	1.97	0.0405	0.127	0.0866	0.653		
PCB 41/64/71/72	2,2',3,4-TeCB + 2,3,4',6-TeCB + 2,3',4',6- TeCB + 2,3',5,5'-TeCB	µg/Kg	1.66	1.20	0.191	0.0156	1.53	0.235	0.476	1.42 T	0.551 J	11.0	0.241	0.757	0.474	3.54		
PCB 42/59	2,2',3,4'-TeCB + 2,3,3',6-TeCB	µg/Kg	0.581	0.396	0.0559	0.00494 U	0.703	0.0838	0.160	0.539 T	0.196 J	3.68	0.0853	0.252	0.171	1.30		
PCB 43/49	2,2',3,5-TeCB + 2,2',4,5'-TeCB	µg/Kg	1.87	1.69	0.352	0.0441	1.66	0.243	0.472	1.75 T	0.536 J	9.03	0.251	0.713	0.513	4.04		
PCB 44	2,2',3,5'-TeCB	µg/Kg	1.90	1.29	0.272	0.0112	2.00	0.259	0.518	1.62 T	0.629 J	11.8	0.266	0.784	0.531	4.06		
PCB 45 PCB 46	2,2',3,6-TeCB 2,2',3,6'-TeCB	μg/Kg	0.232	0.161 0.0987	0.0133 0.00686	0.00494 U 0.00494 U	0.339 0.147	0.0328	0.0696 0.0312	0.212 T 0.0943 T	0.0855 J 0.0371 J	1.86 0.748	0.0335	0.109 0.0455	0.0744 0.0347	0.603		
РСВ 40	2,2',4,4'-TeCB	μg/Kg μg/Kg	0.633	0.669	0.119	0.0294	0.642	0.125	0.203	0.619 T	0.0371 J 0.211 J	3.21	0.122	0.278	0.207	1.34		
PCB 48/75	2,2',4,5-TeCB + 2,4,4',6-TeCB	μg/Kg μg/Kg	0.388	0.240	0.0263	0.00494 U	0.376	0.0507	0.0899	0.327 T	0.118 J	2.70	0.0479	0.147	0.0977	0.877		
PCB 50	2,2',4,6-TeCB	µg/Kg	0.0496 U	0.00719	0.00499 U	0.00494 U	0.00694	0.00489 U	0.00488 U	0.00802 T	0.00476 UJ	0.0315	0.00484 U	0.00495 U	0.00503 U	0.0205		
PCB 51	2,2',4,6'-TeCB	μg/Kg	0.0793	0.0901	0.00723	0.00494 U	0.115	0.0335	0.0441	0.102 T	0.0411 J	0.588	0.0285	0.0528	0.0446	0.232		
PCB 52/69	2,2',5,5'-TeCB + 2,3',4,6-TeCB	µg/Kg	2.34	1.81	0.534	0.0312	2.08	0.303	0.565	1.99 T	0.689 J	11.7	0.297	0.820	0.629	4.73		
PCB 53 PCB 54	+ 2,2',5,6'-TeCB 2,2',6,6'-TeCB	μg/Kg μg/Kg	0.263 0.0496 U	0.206 0.00498 U	0.0193 0.00499 U	0.00494 U 0.00494 U	0.336	0.0560	0.0899 0.00822	0.273 T 0.00602 T	0.102 J 0.0069 J	1.79 0.0263	0.0504 0.00608	0.124 0.00704	0.105 0.00503 U	0.651 0.0106		
PCB 55	2,3,3',4-TeCB	μg/Kg μg/Kg	0.0304 J	0.00498 0	0.00596	0.00494 U 0.00494 U	0.0308	0.00498	0.00822	0.00002 T 0.0230 T	0.0009 J 0.0110 J	0.0203	0.00484 U	0.00704	0.00303 0	0.0100		
PCB 56/60	2,3,3',4'-TeCB + 2,3,4,4'-TeCB	μg/Kg	1.14	0.745	0.143	0.00494 U	1.14	0.172	0.391	0.930 T	0.460 J	7.48	0.184	0.626	0.319	2.48		
PCB 57	2,3,3',5-TeCB	µg/Kg	0.0169 J	0.0122	0.00499 U	0.00494 U	0.0130	0.00489 U	0.00488 U	0.0116 T	0.00476 UJ	0.0411	0.00484 U	0.00653	0.00503 U	0.0278		
PCB 58	2,3,3',5'-TeCB	µg/Kg	0.0184 J	0.0175	0.00651	0.00494 U	0.00509	0.00489 U	0.00488 U	0.0199 T	0.00476 UJ	0.0221	0.00484 U	0.00529	0.00503 U	0.0376		
PCB 61/70	2,3,4,5-TeCB + 2,3',4',5-TeCB	μg/Kg	2.80	2.11	0.552	0.0162	1.71	0.345	0.635	2.28 T	0.757 J	11.1	0.335	1.02	0.667	5.84		
PCB 62 PCB 63	2,3,4,6-TeCB 2,3,4',5-TeCB	μg/Kg	0.0496 U 0.0875	0.00498 U 0.0733	0.00499 U 0.0151	0.00494 U 0.00494 U	0.00245 U 0.0669	0.00489 U 0.0117	0.00488 U 0.0225	0.00485 UT 0.0804 T	0.00476 UJ 0.0267 J	0.0126 U 0.419	0.00484 U 0.0112	0.00495 U 0.0426	0.00503 U 0.0265	0.00489 U 0.213		
PCB 65	2,3,5,6-TeCB	μg/Kg μg/Kg	0.0875 0.0496 U	0.0735 0.00498 U	0.00499 U	0.00494 U 0.00494 U	0.0009 0.00245 U	0.0117 0.00489 U	0.0225 0.00488 U	0.0804 I 0.00485 UT	0.0287 J 0.00476 UJ	0.419 0.0126 U	0.00112 0.00484 U	0.0426 0.00495 U	0.0265 0.00503 U	0.213 0.00489 U		
PCB 66/76	2,3',4,4'-TeCB + 2',3,4,5-TeCB	μg/Kg μg/Kg	2.26	1.50	0.300	0.00985	1.65	0.296	0.617	2.11 T	0.730 J	9.72	0.302	0.990	0.609	5.03		
PCB 67	2,3',4,5-TeCB	μg/Kg	0.0638	0.0378	0.00761	0.00494 U	0.0650	0.00879	0.0169	0.0462 T	0.0191 J	0.253	0.00977	0.0249	0.0160	0.108		
PCB 68	2,3',4,5'-TeCB	µg/Kg	0.0446 J	0.0441	0.0181	0.00494 U	0.00804	0.00489 U	0.00577	0.0391 T	0.0059 J	0.0451	0.00484 U	0.0105	0.0118	0.0668		

							0.01					D						
	Leastion (ft from O	Ealong shore)		Upst 175			Outfall 50' down	350' down	550' 0	down	700' down	Downstream 1000' down	1	1450'	down			
	Location (ft from O	(ft offshore)		225' of	1		75' offshore	475' offshore	250' of		300' offshore	1000 down 100' offshore			ffshore			
		(it offshole) Study	LWG Round 3			I WG Round 3	LWG Round 2	LWG Round 3	LWG Round 3		LWG Round 2	LWG Round 2	LWG Round 3			LWG Round 3		
		Sample Type	Surface	Subsurface	Subsurface	Subsurface	Surface	Surface	Surface	Subsurface	Surface	Surface	Surface	Subsurface	Subsurface	Subsurface		
		Sample ID	LW3-G609	LW3-C609-B	LW3-C609-C	LW3-C609-D	LW2-G038	LW3-G607	LW3-G608	LW3-C608-B	LW2-G030	LW2-G028	LW3-G605	LW3-C605-B	LW3-C605-C	LW3-C605-D		JSCS ⁽¹⁾
		Sample Date	11/28/2007	12/13/2007	12/13/2007	12/13/2007	9/8/2004	11/27/2007	11/27/2007	1/2/2008	7/23/2004	8/4/2004	11/27/2007	12/12/2007	12/12/2007	12/12/2007	Scree	ning Level Value
		Depth	0-25 cm	30-151 cm	151-273 cm	273-311 cm	0-26 cm	0-30 cm	0-30 cm	30-152 cm	0-28 cm	0-29 cm	0-30 cm	30-151 cm	151-273 cm	273-341 cm	(Toxicity)	(Bioaccumulation)
IUPAC Number ⁽²⁾	Chemical Name	Units ⁽³⁾						•	•			•		-		•		
PCB 73	2.3'.5'.6-TeCB	µg/Kg	0.0496 U	0.00498 U	0.00499 U	0.00494 U	0.0514	0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0126 U	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 74	+ 2,4,4',5-TeCB	μg/Kg	0.884	0.618	0.121	0.00494 U	0.849	0.139	0.289	0.820 T	0.338 J	5.57	0.134	0.474	0.278	2.31		
PCB 77	3,3',4,4'-TeCB	µg/Kg	0.181	0.140	0.0184	0.00178 U	0.214	0.0362	0.0730	0.192 T	0.0833 J	0.858	0.0368	0.149	0.0641	0.427		0.052
PCB 78	3,3',4,5-TeCB	µg/Kg	0.0496 U	0.00498 U	0.00499 U	0.00494 U	0.00245 U	0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0126 U	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 79 PCB 80	3,3',4,5'-TeCB 3,3',5,5'-TeCB	µg/Kg	0.0710 0.0496 U	0.0456 0.00498 U	0.0221 0.00499 U	0.00494 U 0.00494 U	0.0175 0.00245 U	0.00627 0.00489 U	0.0100 0.00488 U	0.0513 T 0.00485 UT	0.0116 J 0.00476 UJ	0.0852 0.0126 U	0.00571 0.00484 U	0.0187 0.00495 U	0.0187 0.00503 U	0.114 0.00489 U		
PCB 80 PCB 81	3,5,5,5-1eCB 3,4,4',5-TeCB	μg/Kg μg/Kg	0.00625 J	0.00498 U 0.00446 J	0.00499 U 0.00170 J	0.00494 U 0.000445 U	0.00243 0	0.00489 U 0.00241 J	0.00438 U 0.00432 J	0.00485 UT	0.00478 UJ	0.0120 0	0.00484 U 0.00192 J	0.00493 0	0.00303 U 0.00270 J	0.00489 0		0.017
PCB 82	2,2',3,3',4-PeCB	μg/Kg	0.366	0.248	0.101	0.00494 U	0.261	0.0558	0.124	0.328 T	0.139 J	1.64	0.0580	0.161	0.111	0.785		
PCB 83	2,2',3,3',5-PeCB	µg/Kg	0.0496 U	0.00498 U	0.00499 U	0.00494 U	0.00245 U	0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0138	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 84/92	2,2',3,3',6-PeCBb + 2,2',3,5,5'-PeCB	µg/Kg	1.79	1.76	0.911	0.0277	0.837	0.193	0.338	1.41 T	0.386 J	3.80	0.183	0.463	0.429	2.75		
PCB 85/116	2,2',3,4,4'-PeCB + 2,3,4,5,6-PeCB	µg/Kg	0.518	0.358	0.164	0.00494 U	0.373	0.0818	0.162	0.431 T	0.191 J	2.06	0.0825	0.200	0.150	0.923		
PCB 86	2,2',3,4,5-PeCB 2,2',3,4,5'-PeCB + 2,3,4',5,6-PeCB + 2',3,4,5,6'-	µg/Kg	0.0496 U	0.0081	0.00499 U	0.00494 U	0.0174	0.00489 U	0.00821	0.0101 T	0.00792 J	0.162	0.00484 U	0.00797	0.00503 U	0.0368		
PCB 87/117/125	PeCB	µg/Kg	1.07	0.721	0.438	0.00757	0.730	0.161	0.299	0.777 T	0.351 J	3.54	0.157	0.349	0.268	1.70		
PCB 88/91	2,2',3,4,6-PeCB + 2,2',3,4',6-PeCB	µg/Kg	0.619	0.586	0.222	0.0201	0.339	0.0781	0.139	0.566 T	0.158 J	1.78	0.0761	0.193	0.170	0.988		
PCB 89 PCB 90/101	2,2',3,4,6'-PeCB 2,2',3,4',5-PeCB + 2,2',4,5,5'-PeCB	µg/Kg	0.0342 J 4.80	0.0270 4.35	0.00750	0.00494 U 0.0774	0.0385	0.00581 0.488	0.0132	0.0378 T 3.13 T	0.0151 J 0.917 J	0.279 7.01	0.00597 0.457	0.0177	0.0125 0.971	0.0998 6.01		
PCB 90/101 PCB 93	2,2,3,4,5-FeCB + 2,2,4,5,5-FeCB	μg/Kg μg/Kg	0.0496 U	0.00498 U	0.00499 U	0.00774 0.00494 U	0.00245 U	0.488 0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0126 U	0.437 0.00484 U	0.00495 U	0.00503 U	0.001 0.00489 U		
PCB 94	2,2',3,5,6'-PeCB	μg/Kg	0.0187 J	0.0164	0.00499 U	0.00494 U	0.0150	0.00577	0.00899	0.0210 T	0.00939 J	0.0847	0.00522	0.00889	0.00751	0.0359		
PCB 95/98/102	2,2',3,5',6-PeCB + 2,2',3',4,6-PeCB + 2,2',4,5,6'- PeCB	µg/Kg	3.39	2.87	1.85	0.0692	1.58	0.358	0.586	2.32 T	0.714 J	6.33	0.323	0.819	0.708	4.43		
PCB 96	2,2',3,6,6'-PeCB	µg/Kg	0.0308 J	0.0255	0.00711	0.00494 U	0.0175	0.00637	0.0108	0.0316 T	0.0122 J	0.172	0.00528	0.0139	0.0105	0.0667		
PCB 97	2,2',3',4,5-PeCB	µg/Kg	0.965	0.718	0.338	0.00732	0.593	0.128	0.244	0.847 T	0.286 J	3.04	0.129	0.334	0.270	1.80		
PCB 99	2,2',4,4',5-PeCB	µg/Kg	2.19 0.0578	2.18 0.0736	0.967 0.0195	0.0356 0.00494 U	0.797	0.226	0.384 0.0168	1.69 T 0.0495 T	0.447 J 0.0116 J	4.07	0.218 0.0130	0.546 0.0147	0.505 0.0158	3.20 0.0430		
PCB 100 PCB 103	2,2',4,4',6-PeCB 2,2',4,5',6-PeCB	μg/Kg μg/Kg	0.131	0.159	0.0753	0.00494 0	0.00903	0.0148	0.0108	0.0493 T 0.0923 T	0.0118 J	0.0300	0.00981	0.0147	0.0138	0.0430		
PCB 104	2,2',4,6,6'-PeCB	μg/Kg	0.0496 U	0.00498 U	0.00499 U	0.00494 U	0.00245 U	0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0126 U	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 105	2,3,3',4,4'-PeCB	µg/Kg	0.788	0.545	0.283	0.00400 J	0.580	0.172	0.323	0.710 T	0.342 J	3.32	0.169	0.370	0.243	1.53		0.17
PCB 106/118	2,3,3',4,5-PeCB + 2,3',4,4',5-PeCB	µg/Kg	2.73	2.17	1.19	0.0230	1.39	0.439	0.739	2.42 T	0.866 J	6.31	0.424	0.917	0.787	4.87		0.12
PCB 107/109	2,3,3',4',5-PeCB + 2,3,3',4,6-PeCB 2,3,3',4,5'-PeCB + 2,3,3',5,6-PeCB	µg/Kg	0.320	0.306	0.173	0.00494 U	0.105	0.0341	0.0606	0.251 T	0.0699 J	0.539	0.0332	0.0825	0.0782	0.493 0.306		
PCB 108/112 PCB 110	2,3,3',4',5-PeCB + 2,3,5',5,6-PeCB	μg/Kg μg/Kg	0.180 4.30	0.144 3.35	0.0658	0.00494 U 0.0564	0.105	0.0220	0.0436	0.146 T 3.33 T	0.0470 J 1.11 J	0.478 8.32	0.0229	0.0598	0.0465	6.38		
PCB 111/115	2,3,3,5,5'-PeCB + 2,3,4,4',6-PeCB	μg/Kg μg/Kg	0.0499	0.0328	0.0178	0.00494 U	0.0419	0.00847	0.0179	0.0333 T	0.0169 J	0.271	0.00937	0.0190	0.00960	0.0658		
PCB 113	2,3,3',5',6-PeCB	µg/Kg	0.0496 U	0.0197	0.0101	0.00494 U	0.00675	0.00489 U	0.00488 U	0.0153 T	0.00476 UJ	0.0165	0.00484 U	0.00495 U	0.00503 U	0.0608		
PCB 114	2,3,4,4',5-PeCB	µg/Kg	0.0537	0.0313	0.0120	0.00101 U	0.0343	0.0103	0.0184	0.0408 T	0.0202 J	0.267	0.00927	0.0242	0.0119	0.0973		0.17
PCB 119	2,3',4,4',6-PeCB	µg/Kg	0.219	0.215	0.0966	0.00494 U	0.0397	0.0160	0.0238	0.146 T	0.0259 J	0.198	0.0146	0.0392	0.0421	0.223		
PCB 120 PCB 121	2,3',4,5,5'-PeCB 2,3',4,5',6-PeCB	μg/Kg μg/Kg	0.0610 0.0496 U	0.0261 0.00717	0.0199 0.00499 U	0.00494 U 0.00494 U	0.00245 U 0.00245 U	0.00489 U 0.00489 U	0.00488 U 0.00488 U	0.0220 T 0.00485 UT	0.00476 UJ 0.00476 UJ	0.0139 0.0126 U	0.00484 U 0.00484 U	0.00495 U 0.00495 U	0.00605 0.00503 U	0.0332 0.00489 U		
PCB 122	2;3;3;4,5-PeCB	μg/Kg μg/Kg	0.0302 J	0.0228	0.0107	0.00494 U	0.0245	0.00555	0.00992	0.0264 T	0.0133 J	0.150	0.00600	0.0145	0.00948	0.0641		
PCB 123	2',3,4,4',5-PeCB	µg/Kg	0.0405 J	0.0242	0.0114	0.000954 U	0.0323	0.00805	0.0157	0.0351 T	0.0188 J	0.174	0.00936	0.0198	0.0121	0.0692		0.21
PCB 124	2',3,4,5,5'-PeCB	µg/Kg	0.149	0.0619	0.0369	0.00494 U	0.0571	0.0183	0.0335	0.0745 T	0.0379 J	0.253	0.0183	0.0371	0.0316	0.152		
PCB 126 PCB 127	3,3',4,4',5-PeCB	µg/Kg	0.0159 J	0.0109	0.00642	0.00111 U	0.00978	0.00408 J 0.00489 U	0.00588 0.00488 U	0.0160 T 0.00485 UT	0.00680 J	0.0342	0.00459 U	0.00752	0.00644	0.0318		0.00005
PCB 127 PCB 128/162	3,3',4,5,5'-PeCB 2,2',3,3',4,4'-HxCB + 2,3,3',4',5,5'-HxCB	μg/Kg μg/Kg	0.0496 U 0.597	0.00498 U 0.438	0.00499 U 0.370	0.00494 U 0.00722	0.00245 U 0.217	0.00489 U	0.00488 U	0.00485 UT 0.409 T	0.00476 UJ 0.150 J	0.0126 U 0.596	0.00484 U 0.0850	0.00495 U 0.137	0.00503 U 0.146	0.00489 U 0.809		
PCB 128/102 PCB 129	2,2',3,3',4,5-HxCB	μg/Kg μg/Kg	0.146	0.102	0.0763	0.00494 U	0.0638	0.0249	0.0378	0.102 T	0.0455 J	0.197	0.0243	0.0393	0.0359	0.208		
PCB 130	2,2',3,3',4,5'-HxCB	µg/Kg	0.406	0.335	0.517	0.0102	0.0790	0.0413	0.0571	0.230 T	0.0619 J	0.263	0.0403	0.0602	0.0845	0.437		
PCB 131	2,2',3,3',4,6-HxCB	µg/Kg	0.0496 U	0.00498 U	0.00499 U	0.00494 U	0.00245 U	0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0126 U	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 132/161	2,2',3,3',4,6'-HxCB + 2,3,3',4,5',6-HxCB	µg/Kg	1.70 0.298	1.33 0.370	1.14 0.261	0.0249 0.00494 U	0.369	0.163 0.0192	0.242 0.0285	0.874 T	0.278 J	1.05	0.150	0.263 0.0332	0.291 0.0404	1.75		
PCB 133/142 PCB 134/143	2,2',3,3',5,5'-HxCB + 2,2',3,4,5,6-HxCB 2,2',3,3',5,6-HxCB + 2,2',3,4,5,6'-HxCB	μg/Kg μg/Kg	0.298	0.370	0.261 0.187	0.00494 U 0.00494 U	0.0368	0.0192	0.0285	0.131 T 0.165 T	0.0320 J 0.0508 J	0.130 0.218	0.0178 0.0305	0.0332	0.0404	0.216		
PCB 135	2,2,3,3,5,6'HxCB	μg/Kg μg/Kg	1.25	1.21	0.881	0.00494 0	0.151	0.0776	0.107	0.514 T	0.139 J	0.437	0.0305	0.144	0.151	0.820		
PCB 136	2,2',3,3',6,6'-HxCB	μg/Kg	1.00	0.881	0.736	0.0268	0.149	0.0771	0.107	0.476 T	0.132 J	0.448	0.0687	0.136	0.139	0.804		
PCB 137	2,2',3,4,4',5-HxCB	µg/Kg	0.122	0.108	0.0633	0.00494 U	0.0689	0.0222	0.0384	0.104 T	0.0466 J	0.219	0.0222	0.0372	0.0352	0.242		
PCB 138/163	2,2',3,4,4',5'-HxCB + 2,3,3',4',5,6-HxCB + 2,3,3',4',5',6-HxCB	µg/Kg	6.12	4.93	5.08	0.0994	1.15	0.650	0.925	3.07 T	1.03 J	3.42	0.601	0.930	1.03	5.74		
PCB 139/149	2,2',3,4,4',6-HxCB + 2,2',3,4',5',6-HxCB	µg/Kg	6.59	5.22	4.83	0.148	0.910	0.473	0.654	2.75 T	0.821 J	2.43	0.439	0.825	0.831	4.68		
PCB 140	2,2',3,4,4',6'-HxCB	µg/Kg	0.141	0.137	0.127	0.00494 U	0.00734	0.00489 U	0.00546	0.0411 T	0.00967 J	0.0262	0.00484 U	0.0107	0.0115	0.0626		
PCB 141	2,2',3,4,5,5'-HxCB	µg/Kg	1.28	0.858	0.914	0.0151	0.188	0.118	0.171	0.498 T	0.184 J	0.582	0.109	0.156	0.164	0.976		

				Upst	ream	Outfall					Downstream						
	Location (ft from 0	OF along shore)		175		50' down	350' down	550'	down	700' down	1000' down		1450'	down		1	
		(ft offshore)		225' 0	1	75' offshore	475' offshore	_	offshore	300' offshore	100' offshore			ffshore		1	
		Study	LWG Round 3	LWG Round 3	LWG Round 3 LWG Rou	nd 3 LWG Round 2	LWG Round 3	LWG Round 3	1	LWG Round 2	LWG Round 2	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 3	-	
		Sample Type	Surface	Subsurface	Subsurface Subsurf	ce Surface	Surface	Surface	Subsurface	Surface	Surface	Surface	Subsurface	Subsurface	Subsurface	1	(1)
		Sample ID	LW3-G609	LW3-C609-B	LW3-C609-C LW3-C60	9-D LW2-G038	LW3-G607	LW3-G608	LW3-C608-B	LW2-G030	LW2-G028	LW3-G605	LW3-C605-B	LW3-C605-C	LW3-C605-D		JSCS ⁽¹⁾
		Sample Date	11/28/2007	12/13/2007	12/13/2007 12/13/20	07 9/8/2004	11/27/2007	11/27/2007	1/2/2008	7/23/2004	8/4/2004	11/27/2007	12/12/2007	12/12/2007	12/12/2007	Scree	ning Level Value
		Depth	0-25 cm	30-151 cm	151-273 cm 273-311	cm 0-26 cm	0-30 cm	0-30 cm	30-152 cm	0-28 cm	0-29 cm	0-30 cm	30-151 cm	151-273 cm	273-341 cm	(Toxicity)	(Bioaccumulation)
IUPAC Number ⁽²⁾	Chemical Name	Units ⁽³⁾															
PCB 144	2,2',3,4,5',6-HxCB	µg/Kg	0.301	0.230	0.246 0.0055	0.0493	0.0263	0.0381	0.119 T	0.0467 J	0.145	0.0235	0.039	0.0400	0.230		
PCB 145	2,2',3,4,6,6'-HxCB	μg/Kg	0.0496 U	0.00498 U	0.00499 U 0.00494	U 0.00245 U	U 0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.00289 J	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 146/165	2,2',3,4',5,5'-HxCB + 2,3,3',5,5',6-HxCB	µg/Kg	1.85	1.96	2.04 0.0320		0.110	0.149	0.724 T	0.165 J	0.511	0.102	0.175	0.237	1.24		
PCB 147	2,2',3,4',5,6-HxCB	µg/Kg	0.120	0.113	0.0459 0.00494		0.0186	0.0222	0.0938 T	0.0290 J	0.103	0.0172	0.0292	0.0278	0.120		
PCB 148	2,2',3,4',5,6'-HxCB	µg/Kg	0.0697	0.121 0.0463	0.0527 0.00494		U 0.00489 U U 0.00489 U	0.00488 U 0.00488 U	0.0218 T	0.00476 UJ 0.00476 UJ	0.00991 J	0.00484 U 0.00484 U	0.00495 U	0.00650 0.00559	0.0234 0.0205		
PCB 150 PCB 151	2,2',3,4',6,6'-HxCB 2,2',3,5,5',6-HxCB	μg/Kg μg/Kg	0.0537	1.70	0.0149 0.00494		0.142	0.00488 0	0.0226 T 0.782 T	0.00478 UJ 0.243 J	0.00979 J 0.613	0.00484 0	0.00495 U 0.238	0.00539	1.36		
PCB 151 PCB 152	2,2',3,5,6,6'-HxCB	μg/Kg μg/Kg	0.0496 U	0.00498 U	0.00499 U 0.00494		U 0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.00663 J	0.00484 U	0.00495 U	0.00503 U	0.00545		
PCB 152	2,2',4,4',5,5'-HxCB	μg/Kg μg/Kg	7.73	6.15	7.30 0.140		0.650	0.886	3.41 T	0.961 J	2.78 J	0.609	0.928	1.07	5.98		
PCB 154	2,2',4,4',5,6'-HxCB	µg/Kg	0.377	0.426	0.378 0.0061		0.0140	0.0178	0.159 T	0.0208 J	0.0646	0.0118	0.0267	0.0388	0.191		
PCB 155	2,2',4,4',6,6'-HxCB	μg/Kg	0.0496 U	0.00498 U	0.00499 U 0.00494		U 0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0126 U	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 156	2,3,3',4,4',5-HxCB	µg/Kg	0.449	0.285	0.377 0.00472		0.0552	0.0833	0.246 T	0.0975 J	0.363	0.0524	0.0866	0.0833	0.486		0.21
PCB 157	2,3,3',4,4',5'-HxCB	µg/Kg	0.0601	0.0398	0.0306 0.000612		0.0123	0.0180	0.0471 T	0.0223 J	0.081	0.0107	0.0197	0.0184	0.101		0.21
PCB 158/160 PCB 159	2,3,3',4,4',6-HxCB + 2,3,3',4,5,6-HxCB 2,3,3',4,5,5'-HxCB	µg/Kg	0.528 0.0496 U	0.341 0.00498 U	0.353 0.0056 0.00499 U 0.00494		0.0641 0.00489 U	0.0944 0.00488 U	0.265 T 0.00485 UT	0.111 J 0.00476 UJ	0.394	0.0609 0.00484 U	0.0934 0.00495 U	0.0897 0.00503 U	0.505 0.00489 U		
PCB 159 PCB 166	2,3,4,4,5,6-HxCB	μg/Kg μg/Kg	0.0496 U	0.00498 0	0.00499 U 0.00494 0.00499 U 0.00494		0.00489 U	0.00488 U	0.00483 01 0.00804 T	0.00476 UJ	0.0273	0.00484 U	0.00495 U	0.00503 U	0.00489 0		
PCB 167	2,3',4,4',5,5'-HxCB	μg/Kg	0.175	0.116	0.142 0.0020	-	0.0239	0.0344	0.102 T	0.0412 J	0.134	0.0222	0.0346	0.0364	0.195		0.21
PCB 168	2,3',4,4',5',6-HxCB	μg/Kg	0.0215 J	0.0212	0.0252 0.00494	U 0.00245 U	U 0.00489 U	0.00488 U	0.00912 T	0.00476 UJ	0.00559 J	0.00484 U	0.00495 U	0.00503 U	0.0152		
PCB 169	3,3',4,4',5,5'-HxCB	µg/Kg	0.00908 U	0.00257 U	0.00356 U 0.00057		U 0.000894 U	0.00102 U	0.00192 UT	0.00136 UJ	0.000841 U	0.000711 U	0.00113 U	0.00167 U	0.00277 U		0.00021
PCB 170	2,2',3,3',4,4',5-HpCB	µg/Kg	2.39	1.52	4.56 0.038		0.189	0.277	0.902 T	0.286 J	0.606	0.180	0.244	0.293	1.54		
PCB 171	2,2',3,3',4,4',6-HpCB	µg/Kg	0.644	0.471	1.15 0.0125		0.0516	0.0754	0.265 T	0.0770 J	0.178	0.0492	0.0696	0.0827	0.459		
PCB 172 PCB 173	2,2',3,3',4,5,5'-HpCB 2,2',3,3',4,5,6-HpCB	µg/Kg	0.416	0.274 0.0360	0.808 0.00672 0.083 0.00494		0.0339	0.0496	0.166 T 0.0235 T	0.0496 J 0.00800 J	0.109 0.0180	0.0326 0.00484 U	0.0435 0.00716	0.0556	0.289 0.0397		
PCB 175 PCB 174	2,2',3,3',4,5,6'-HpCB	μg/Kg μg/Kg	2.89	2.09	4.76 0.044		0.00324	0.337	1.15 T	0.330 J	0.673	0.00484 0	0.302	0.382	2.04		
PCB 175	2,2',3,3',4,5',6-HpCB	μg/Kg	0.134	0.0837	0.216 0.00494		0.0107	0.0156	0.0502 T	0.0156 J	0.0300	0.00907	0.0127	0.0150	0.0899		
PCB 176	2,2',3,3',4,6,6'-HpCB	µg/Kg	0.392	0.313	0.690 0.007	0.0207	0.0280	0.0422	0.152 T	0.0415 J	0.0902	0.0263	0.0386	0.0485	0.274		
PCB 177	2,2',3,3',4',5,6-HpCB	µg/Kg	1.73	1.43	3.11 0.0283		0.130	0.186	0.675 T	0.193 J	0.398	0.122	0.175	0.225	1.16		
PCB 178	2,2',3,3',5,5',6-HpCB	µg/Kg	0.636	0.652	1.14 0.0124		0.0502	0.0722	0.260 T	0.0735 J	0.141	0.0486	0.0637	0.0885	0.427		
PCB 179 PCB 180	2,2',3,3',5,6,6'-HpCB 2,2',3,4,4',5,5'-HpCB	µg/Kg	1.40 6.06	1.14 4.05	2.01 0.0254 12.5 0.104		0.107	0.151 0.709	0.549 T 2.32 T	0.148 J 0.718 J	0.323	0.0974 0.465	0.141 0.612	0.173 0.751	0.940 4.03		
PCB 180	2,2',3,4,4',5,6-HpCB	μg/Kg μg/Kg	0.0496 U	0.0186	0.0219 0.00494		U 0.00489 U	0.00488 U	0.00537 T	0.00476 UJ	0.00602 J	0.00484 U	0.00495 U	0.00503 U	0.0251		
PCB 182/187	2,2',3,4,4',5,6'-HpCB + 2,2',3,4',5,5',6-HpCB	μg/Kg	3.82	3.15	7.26 0.0740		0.301	0.435	1.51 T	0.436 J	0.859	0.286	0.394	0.498	2.56		
PCB 183	2,2',3,4,4',5',6-HpCB	µg/Kg	1.57	1.11	2.99 0.0334	0.0892	0.121	0.178	0.582 T	0.179 J	0.366	0.112	0.151	0.186	1.05		
PCB 184	2,2',3,4,4',6,6'-HpCB	µg/Kg	0.0496 U	0.00498 U	0.00499 U 0.00494		U 0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0126 U	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 185	2,2',3,4,5,5',6-HpCB	µg/Kg	0.301	0.200	0.478 0.00494		0.0242	0.0368	0.113 T	0.0364 J	0.0742	0.0231	0.0319	0.0374	0.201		
PCB 186 PCB 188	2,2',3,4,5,6,6'-HpCB	µg/Kg	0.0496 U 0.0148 J	0.00498 U 0.0107	0.00499 U 0.00494 0.00499 U 0.00494		U 0.00489 U U 0.00489 U	0.00488 U 0.00488 U	0.00485 UT 0.00604 T	0.00476 UJ 0.00476 UJ	0.0126 U 0.0126 U	0.00484 U 0.00484 U	0.00495 U 0.00495 U	0.00503 U 0.00503 U	0.00489 U 0.00489 U		
PCB 188 PCB 189	2,2',3,4',5,6,6'-HpCB 2,3,3',4,4',5,5'-HpCB	μg/Kg μg/Kg	0.0825	0.0107	0.191 0.0015		0.00732	0.00488 0	0.00004 T 0.0351 T	0.00478 UJ	0.0126 0	0.00484 0	0.00493 0	0.00303 0	0.00489 0		
PCB 190	2,3,3',4,4',5,6-HpCB	μg/Kg μg/Kg	0.528	0.302	0.996 0.0074		0.0405	0.0599	0.188 T	0.0629 J	0.119	0.0387	0.0525	0.0597	0.314		1.2
PCB 191	2,3,3',4,4',5',6-HpCB	μg/Hg μg/Kg	0.105	0.0616	0.193 0.00494		0.00851	0.0107	0.0382 T	0.0112 J	0.0251	0.00708	0.00946	0.0123	0.0654		
PCB 192	2,3,3',4,5,5',6-НрСВ	µg/Kg	0.0496 U	0.00498 U	0.00499 U 0.00494		U 0.00489 U	0.00488 U	0.00485 UT	0.00476 UJ	0.0126 U	0.00484 U	0.00495 U	0.00503 U	0.00489 U		
PCB 193	2,3,3',4',5,5',6-HpCB	µg/Kg	0.333	0.246	0.632 0.00582		0.0249	0.0368	0.120 T	0.0372 J	0.0684	0.0237	0.0324	0.0408	0.203		
PCB 194 PCB 195	2,2',3,3',4,4',5,5'-OcCB 2,2',3,3',4,4',5,6-OcCB	μg/Kg	1.36 0.621	0.894 0.385	4.33 0.0279 2.06 0.010		0.112 0.0448	0.185 0.0776	0.566 T 0.235 T	0.173 J 0.0681 J	0.344 0.150	0.114 0.0447	0.146 0.0608	0.185 0.0751	0.908		
PCB 195 PCB 196/203	2,2,3,3,4,4,5,6'-OcCB + 2,2',3,4,4',5,5',6-	μg/Kg μg/Kg	1.84	1.12	5.09 0.0383		0.148	0.229	0.233 T 0.685 T	0.0081 J 0.226 J	0.130	0.149	0.156	0.225	1.31		
PCB 197	2,2',3,3',4,4',6,6'-OcCB	μg/Kg μg/Kg	0.0647	0.0431	0.165 0.00494		0.00497	0.00747	0.0228 T	0.00668 J	0.0127	0.00484 U	0.00545	0.00690	0.0406		
PCB 198	2,2',3,3',4,5,5',6-OcCB	μg/Kg	0.0849	0.0612	0.225 0.00494		0.00756	0.0101	0.0355 T	0.0118 J	0.0163	0.00688	0.00817	0.0119	0.0692		
PCB 199	2,2',3,3',4,5,5',6'-OcCB	μg/Kg	1.67	1.10	4.80 0.0414		0.152	0.219	0.659 T	0.220 J	0.336	0.147	0.158	0.230	1.23		
PCB 200	2,2',3,3',4,5,6,6'-OcCB	µg/Kg	0.211	0.136	0.572 0.00494		0.0171	0.0279	0.0838 T	0.0268 J	0.0454	0.0180	0.0201	0.0287	0.158		
PCB 201	2,2',3,3',4,5',6,6'-OcCB	µg/Kg	0.197	0.147	0.542 0.00533		0.0157	0.0243	0.0787 T	0.0242 J	0.0432	0.0163	0.0212	0.0271	0.147		
PCB 202 PCB 204	2,2',3,3',5,5',6,6'-OcCB 2,2',3,4,4',5,6,6'-OcCB	μg/Kg	0.270 0.0496 U	0.214 0.00498 U	0.799 0.00910 0.00499 U 0.00494		0.0264 U 0.00489 U	0.0382 0.00488 U	0.121 T 0.00485 UT	0.0410 J 0.00476 UJ	0.0721 0.0126 U	0.0268 0.00484 U	0.0349 0.00495 U	0.0460 0.00503 U	0.215 0.00489 U		
PCB 204 PCB 205	2,2,3,4,4,5,5',6-OcCB	μg/Kg μg/Kg	0.0498 0	0.00498 0	0.00499 0 0.00494		0.00489 0	0.00488 0	0.00485 U1 0.0263 T	0.00478 UJ 0.00877 J	0.0126 0	0.00484 0	0.00495 0	0.00503 0	0.00489 0		
PCB 205	2,2',3,3',4,4',5,5',6-NoCB	μg/Kg μg/Kg	0.871	0.523	4.26 0.0710		0.0668	0.0964	0.265 T	0.112 J	0.190	0.0839	0.103	0.116	0.371		
PCB 207	2,2',3,3',4,4',5,6,6'-NoCB	μg/Kg	0.0807	0.0543	0.277 0.00500		0.00701 UJ	0.0102	0.0325 T	0.0118 J	0.0198	0.00799	0.00959	0.0135	0.0506		
PCB 208	2,2',3,3',4,5,5',6,6'-NoCB	µg/Kg	0.304	0.174	1.66 0.029		0.0209	0.0290	0.0745 T	0.0336 J	0.0521	0.0289	0.0316	0.0369	0.112		
PCB 209	Decachlorobiphenyl	µg/Kg	1.11	0.801	4.54 0.0840	0.0320	0.0621	0.0828	0.312 T	0.0893 J	0.164	0.0881	0.120	0.111	0.424		

			Ups	tream		Outfall					Downstream						
Location (ft from O	F along shore)		175	5' up		50' down	350' down	550'	down	700' down	1000' down		1450	' down			
	(ft offshore)		225' o	offshore		75' offshore	475' offshore	250' o	ffshore	300' offshore	100' offshore		325' o	offshore]	
	Study	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 2	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 2	LWG Round 2	LWG Round 3	LWG Round 3	LWG Round 3	LWG Round 3		
	Sample Type	Surface	Subsurface	Subsurface	Subsurface	Surface	Surface	Surface	Subsurface	Surface	Surface	Surface	Subsurface	Subsurface	Subsurface		JSCS ⁽¹⁾
	Sample ID	LW3-G609	LW3-C609-B	LW3-C609-C	LW3-C609-D	LW2-G038	LW3-G607	LW3-G608	LW3-C608-B	LW2-G030	LW2-G028	LW3-G605	LW3-C605-B	LW3-C605-C	LW3-C605-D	Seroo	ing Level Value
	Sample Date	11/28/2007	12/13/2007	12/13/2007	12/13/2007	9/8/2004	11/27/2007	11/27/2007	1/2/2008	7/23/2004	8/4/2004	11/27/2007	12/12/2007	12/12/2007	12/12/2007	Scree	ling Level value
	Depth	0-25 cm	30-151 cm	151-273 cm	273-311 cm	0-26 cm	0-30 cm	0-30 cm	30-152 cm	0-28 cm	0-29 cm	0-30 cm	30-151 cm	151-273 cm	273-341 cm	(Toxicity)	(Bioaccumulation)
IUPAC Number ⁽²⁾ Chemical Name	Units ⁽³⁾																
Total Monochlorobiphenyls ⁽⁴⁾	µg/Kg	0.174 J	0.0763	0.0171	0.00494 U	1.21	0.0322	0.0631	0.0810 T	0.0437	0.0561	0.0285	0.0422	0.0507	0.193		
Total Dichlorobiphenyls ⁽⁴⁾	µg/Kg	0.767 J	0.909	0.0464	0.00988 U	11.3	0.418	0.761	0.832 T	0.699	1.42	0.447	0.528	0.552	2.25		
Total Trichlorobiphenyls ⁽⁴⁾	µg/Kg	6.54 J	5.25	0.449	0.0365	14.9	1.22	1.88	4.91 T	2.33	26.8	1.15	2.56	2.02	15.3		
Total Tetrachlorobiphenyls ⁽⁴⁾	µg/Kg	18.0 J	13.4 J	2.83 J	0.158	16.0	2.51 J	4.88 J	15.8 JT	5.79	95.9	2.51 J	7.60	4.99 J	39.1		
Total Pentachlorobiphenyls ⁽⁴⁾	µg/Kg	24.9 J	21.1	11.8	0.334 J	11.9	3.09 J	5.38	19.0 T	6.27	54.5	2.96	7.06	5.99	37.4		
Total Hexachlorobiphenyls ⁽⁴⁾	µg/Kg	33.8 J	27.7	27.8	0.581 J	5.13	2.90	4.09	15.4 T	4.76	15.3	2.70	4.49	4.91	27.5		
Total Heptachlorobiphenyls ⁽⁴⁾	µg/Kg	23.5 J	17.2	43.8	0.403 J	1.34	1.85	2.69	9.11 T	2.74	5.52	1.74	2.39	2.97	15.8		
Total Octachlorobiphenyls ⁽⁴⁾	µg/Kg	6.38	4.14	18.8	0.133	0.299	0.534	0.828	2.51 T	0.811	1.38	0.528	0.618	0.845	4.56		
Total Nonachlorobiphenyls ⁽⁴⁾	µg/Kg	1.26	0.751	6.20	0.105	0.0609	0.0877	0.136	0.372 T	0.157	0.262	0.121	0.144	0.166	0.534		
Total Decachlorobiphenyls ⁽⁴⁾	µg/Kg	1.11	0.801	4.54	0.0846	0.0320	0.0621	0.0828	0.312 T	0.0893	0.164	0.0881	0.120	0.111	0.424		
Total PCBs ⁽⁴⁾	µg/Kg	116 J	91.3 J	116 J	1.83 J	62.0	12.7 J	20.8 J	68.3 JT	23.7	201	12.3 J	25.6	22.6 J	143	676	0.39

NOTES;

MoCB = Monochlorobiphenyl

DiCB = Dichlorobiphenyl

TriCB = Trichlorobiphenyl

TeCB = Tetrachlorobiphenyl

PeCB = Pentachlorobiphenyl

HeCB = Hexachlorobiphenyl

HpCB = Heptachlorobiphenyl

OcCB = Octachlorobiphenyl

NoCB = Nonachlorobiphenyl

 $\mathbf{J} = \mathbf{Estimate}$

NA = Not analyzed

T = Value is an average or selected result, numerical value was mathematically derived

U = The analyte was not detected above the reported sample quantification limit.

UJ = Not detected, and the detection limit is an estimate

-- No JSCS screening level available

ug/Kg = Micrograms per kilogram

⁽¹⁾ JSCS - Portland Harbor Joint Source Control Strategy (DEQ/EPA Final December 2005, Amended July 2007)

⁽²⁾ IUPAC - International Union of Pure and Applied Chemistry.

(3) All results reported on a dry-weight basis

⁽⁴⁾ Totals are calculated by assigning "0" to undetected constituents

= concentration exceeds JSCS Toxicity Screening Level Value **bold** = concentration exceeds JSCS Bioaccumulation Screening Level Value

APPENDIX C Outfall Basin 53A 2007/2008 Sediment Trap and 2010 Inline Solids Sampling Data Summary Report

Appendix C Outfall Basin 53A 2007/2008 Sediment Trap and 2010 Inline Solids Sampling Data Summary Report

Introduction

This report summarizes the results of the City of Portland BES 2007/2008 and 2010 source investigation of inline solids in the Outfall Basin 53A shared stormwater conveyance system. In 2005, the City collected an inline solids sample from the Evraz Oregon Steel (EOS) stormwater lateral just upstream of the lateral's connection to the City conveyance system to evaluate whether EOS was contributing PCBs to the City conveyance system (BES, 2005). To identify other potential source areas in Basin 53A, the City deployed inline sediment traps in late 2007 at five locations, including one location near the outfall and four upstream locations. Additionally, concurrent with the sediment trap deployments, the City collected four stormwater grab samples between February and May 2008 (the stormwater sampling events are discussed in Appendix D). The City also collected tw inline solids samples from one of the Basin 53A branch lines, upstream of Consolidated Metco (ConMet) lateral connections, in September 2010 and December 2010. The purpose of the sediment trap and inline solids sampling was to identify the presence, location and extent of contaminants entering the Basin 53A shared stormwater conveyance system and to investigate potential upland sources of contamination (BES, 2007).

Due to limited volume of solids captured in the sediment traps, the sediment trap samples were not analyzed for all target constituents proposed in the *Sampling and Analysis Plan* (SAP) (BES, 2007).

Basin Setting and Physical System

Outfall 53A discharges to the east side of the Willamette River at approximately river mile 2.7, in the Portland Harbor Study Area (see Figure C-1). The outfall discharges stormwater runoff from an approximately 66.1-acre drainage basin within the North Rivergate industrial area. The Basin 53A conveyance system was constructed in 1970, and the basin expanded through the early 1980s as industrial sites in the area developed and connected to the system.

The basin stormwater conveyance system consists of three branches and associated catchment systems that drain to a 48-inch-diameter main line at the intersection of N. Rivergate Boulevard and N. Ramsey Boulevard (see Figure C-1). Three stormwater lines discharge to the 48-inch-diameter main at manhole AAA179: a 36-inch-diameter pipe conveys stormwater drainage from the northern portion of the outfall basin ("northern branch"), a 24-inch-diameter pipe conveys stormwater drainage from the eastern portion of the basin ("eastern branch"), and a 42-inch-

diameter pipe conveys stormwater drainage from the southern portion of the basin ("southern branch").

Sampling Activities

2007/2008 Sediment Trap Sampling. The City sediment trap sampling activities were completed in accordance with the SAP submitted to DEQ in October 2007 (BES, 2007). The sediment trap locations were selected to characterize cumulative discharges from the whole basin as well as discharges to each of the three branches connecting to the main line. In addition, sediment traps were installed in the EVRAS North America (EVRAS) lateral (near the upstream end of the northern branch) at the same location sampled in 2005. The City deployed two sediment traps between October 2007 and May 2008 at each of the five locations shown on Figure C-1 and summarized below.

Branch	Trap #	Manhole	Description
Northern	ST1	AAA171	Upstream of MH in 24-inch-diameter EVRAS lateral line (identical to location of City's June 2005 inline solids sample)
	ST2	AAA179	Upstream of MH in 36-inch-diameter line
Eastern	ST3	AAA179	Upstream of MH in 24-inch-diameter line
Southern	ST4	AAA179	Upstream of MH in 42-inch-diameter line
Main Line (whole basin)	ST5	AAA170	Upstream of MH in 48-inch-diameter line

Notes:

ST = station

MH = manhole

The sediment traps were inspected monthly to assess depth/volume of solids, note general conditions, and remove any debris that might be obstructing the openings of the sediment trap bottles. Photographs of the sediment traps in their installed locations are provided in Attachment C-1. Field notes taken during sediment trap installation, monitoring and removal activities are provided in Attachment C-2.

In accordance with BES's SOPs 5.01b, "*Sampling Stormwater Solids Using Inline Sediment Traps*", field personnel filtered the bottle contents to generate solids samples for laboratory analysis. Collection and filtering processes are described in detail in the field notes (Attachment C-2).

Final volumes for the samples were limited. Therefore, chemical analysis of the samples generally followed the priority order established in the SAP based on contaminants of interest in Willamette River sediments near OF 53A. Based on available sample volumes, the samples collected from ST1, ST4, and ST5 were analyzed for PCB congeners, total organic carbon (TOC), total solids (TS), and metals; and the samples collected from ST2 and ST3 were analyzed for PCB congeners, TOC, and TS.

2010 Inline Solids Sampling. Based on elevated metals and PCBs concentrations detected in the ST4 sediment trap sample (downstream end of the southern branch), the City conducted additional inline solids sampling in the southern branch to investigate possible sources of metals and PCBs upstream of connections from the ConMet site. The summer 2010 inline solids

investigations SAP (BES, 2010a) proposed to collect an inline solids sample from manhole AAA188. However, because the manhole was inaccessible at the time of sampling (i.e., manhole cover buried), a sample was collected at the proposed alternate sampling location farther downstream in the storm line. The solids sample was collected 10 feet upstream in the 36-inch-diameter branch line entering manhole AMS913, which is the connection point for the most upgradient ConMet lateral connection (see Figure C-1). The sample was collected on September 8, 2010, and was submitted for analysis of PCB congeners, metals, PCB Aroclors, TOC and TS in accordance with the Summer 2010 SAP.

In December, the City uncovered manhole AAA188 and collected an inline solids sample about 2 feet upstream of the manhole. This sample was collected in accordance with the City's Winter 2010-11 SAP (BES, 2010b) and was submitted for analysis of PCB congeners, PCB Aroclors, metals, TOC, and TS. Photographs of the inline solids sampling locations and samples collected are provided in Attachment C-1. Field notes recorded during sampling activities are included in Attachment C-2. Sample locations are shown on Figure C-1.

Summary of Results

PCBs were detected in all five sediment traps samples and in the September and December 2010 grab samples. Metals were detected in the three sediment trap samples that were analyzed for metals and in the two inline solids samples collected from the southern branch. Tables C-1 and C-2 summarize the laboratory analytical results for the 2008 sediment trap samples and the 2010 inline samples and include the JSCS SLVs for reference (DEQ/EPA. 2005). The laboratory reports and data review memoranda for the 2008 and 2010 samples are provided in Attachment C-3.

References

- BES. 2005. City Outfall Basin 53A Upland Source Control Investigation, Dry-Weather Flow and Inline Solids Sampling, City Outfall Basin 53A Stormwater Conveyance System. Letter to Heidi Blischke (DEQ) from Dawn Sanders (BES), November 30, 2005. City of Portland, Bureau of Environmental Services.
- BES. 2007. City of Portland Outfalls Project, Basin 53A Inline Sediment Trap Sampling and Analysis Plan. Letter to Karen Tarnow (DEQ) from Dawn Sanders (BES), October 31, 2007. City of Portland, Bureau of Environmental Services.
- BES. 2010a. City of Portland Outfall Project, Source Investigations for Basins 18, 19A, 52, 52C, 53, 53A, and S-1 Summer 2010 Sampling and Analysis Plan. Letter to Karen Tarnow (DEQ) from Linda Scheffler (BES). August 11, 2010.
- BES. 2010b. City of Portland Outfall Project, Source Investigations for Basins 18, 43, 53A, S-1, S-2 and S-6, Winter 2010-11 Sampling and Analysis Plan. December 6, 2010.
- DEQ/EPA. 2005. Portland Harbor Joint Source Control Strategy, Final, dated December 2005 (updated July 2007).

Tables

 Table C-1 – Basin 53A Inline Solids Results

 Table C-2 -Basin 53A Inline Solids - PCB Congener Results

Figure

Figure C-1 – Basin 53A- Inline Solids Sampling Locations

Attachments

Attachment C-1 – *Field Photographs* Attachment C-2 – *Field Notes* Attachment C-3 – *Laboratory Results* Tables

Table C-2 Basin 53A Inline Solids - PCB Congener Results

			Whole Basin	Norther	n Branch	Eastern Branch		Southern Branch			
			Sediment Trap	Sediment Trap	Sediment Trap	Sediment Trap	Inline Solids	Inline Solids	Sediment Trap		
			ST 5	ST 1	ST 2	ST 3		initie bonds	ST 4		
							Most Upstream —		→ Most DownStream		
			Manhole AAA170	Manhole AAA171	Manhole AAA179	Manhole AAA179	Manhole AAA188	Manhole AMS913	Manhole AAA179		
			Upstream of manhole in	1	Upstream of manhole in	Upstream of manhole in	Upstream of manhole in	10' Upstream of manhole in	1		JSCS ⁽²⁾
			48" Main Line	24" EOS Lateral	36" Line	24" Line	36" Line	36" Line	42" Line	Screen	ning Level Value
			FO080768	FO080764	FO0807065	FO080766	W10L154-01	FO105880	FO080767		
IUPAC Number ⁽¹⁾	Chemical Name	Units	6/3/2008	6/5/2008	6/9/2008	6/9/2008	12/22/2010	9/8/2010	6/5/2008	Toxicity	Bioaccumulation
	yl Congeners (EPA 1668A)		0.470	0.0404.11	0.0070.11	0.400.11	0.0000 11	0.0700	0.004		
PCB 1 PCB 2	2-MoCB 3-MoCB	μg/Kg μg/Kg	0.173 J 0.184 J	0.0494 U 0.0494 U	0.0972 U 0.0972 U	0.183 U 0.183 U	0.0239 U 0.0239 U	0.0762	0.321 J 0.307		
PCB 3	4-MoCB	μg/Kg	0.398 J	0.0494 U	0.0972 U	0.183 U	0.0239 U	0.0230	0.243		
PCB 4	2,2'-DiCB	μg/Kg	0.968 J	0.117	0.382	0.625	0.27	0.191	1.33 J		
PCB 5	2,3-DiCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0271 EMPC	0.024 U	0.0498 U		
PCB 6 PCB 7	2,3'-DiCB 2,4-DiCB	μg/Kg μg/Kg	0.831 J 0.147 J	0.0612 0.0494 U	0.137 0.0972 U	0.270 0.183 U	0.229 0.0546	0.173 0.032	1.120 J 0.127 J		
PCB 7 PCB 8	2,4-DiCB 2,4'-DiCB	μg/Kg μg/Kg	3.39 J	0.292	0.0972 0	2.04	1.24	0.032	3.59 J		
PCB 9	2,5-DiCB	μg/Kg	0.206	0.0494 U	0.0972 U	0.183 U	0.0902	0.0615	0.211		
PCB 10	2,6-DiCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0239 U	0.024 U	0.0498 U		
PCB 11	3,3'-DiCB	μg/Kg	2.98	0.192 B	0.507 B	1.56 B	0.157	0.144 U	6.92		
PCB 12/13 PCB 14	3,4-DiCB + 3,4'-DiCB 3,5-DiCB	μg/Kg μg/Kg	0.944 0.0498 U	0.0494 U 0.0494 U	0.139 0.0972 U	0.321 0.183 U	0.132 0.0239 U	0.0804 EMPC 0.024 U	0.621 0.0498 U		
PCB 15	4,4'-DiCB	μg/Kg	4.19	0.360	1.33	3.64	1.14	0.684	4.1		
PCB 16	2,2',3-TriCB	μg/Kg	1.83	0.225	0.842	2.05	0.922	0.655	2.17		
PCB 17	2,2',4-TriCB	μg/Kg	3.46	0.233	0.828	2.07	1.18	0.787	3.69		
PCB 18/30 PCB 19	2,2',5-TriCB + 2,4,6-TriCB 2,2',6-TriCB	μg/Kg μg/Kg	7.09 0.757 J	0.460 B 0.104	1.47 0.522	<u>3.62</u> 0.538	2.27 0.256	<u>1.61</u> 0.189	<u>6.89</u> 0.662		
PCB 20/28	2,3,3'-TriCB + 2,4,4'-TriCB	μg/Kg	18.7 J	0.826	3.46	9.34	5.13	3.14	18.7		
PCB 21/33	2,3,4-TriCB + 2',3,4-TriCB	μg/Kg	6.15 J	0.308	1.13	2.86	2.78	1.54	7.76		
PCB 22	2,3,4'-TriCB	μg/Kg	5.06 J	0.259	1.06	2.88	1.8	1.09	6.28		
PCB 23 PCB 24	2,3,5-TriCB 2,3,6-TriCB	μg/Kg μg/Kg	0.0498 U 0.0498 U	0.0494 U 0.0494 U	0.0972 U 0.0972 U	0.183 U 0.183 U	0.0239 U 0.0436	0.024 U 0.024 U	0.0498 U 0.0851 EMPC		
PCB 24 PCB 25	2,3',4-TriCB	μg/Kg μg/Kg	1.23 J	0.0494 U	0.187	0.481	0.0436	0.024 0	1.25		
PCB 26/29	2,3',5-TriCB + 2,4,5-TriCB	μg/Kg	2.85 J	0.119	0.498	1.26	0.804	0.48	3.16		
PCB 27	2,3',6-TriCB	μg/Kg	0.859 J	0.0569	0.270	0.458	0.196	0.155	0.723		
PCB 31 PCB 32	2,4',5-TriCB 2,4',6-TriCB	μg/Kg	14.0	0.414 0.207	1.71	4.72	4.16	2.6 0.642	13.9 3.29		
PCB 32 PCB 34	2,3,5-TriCB	μg/Kg μg/Kg	3.76 0.0529	0.0494 U	0.0972 U	0.183 U	0.885 0.0239 U	0.042 0.024 U	0.0579		
PCB 35	3,3',4-TriCB	μg/Kg	0.315	0.0494 U	0.0972 U	0.255	0.0733	0.056	0.469		
PCB 36	3,3',5-TriCB	μ g/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0239 U	0.024 U	0.0498 U		
PCB 37	3,4,4'-TriCB	μg/Kg	4.05	0.341	1.36	4.20	1.06	0.74	5.81		
PCB 38 PCB 39	3,4,5-TriCB 3,4',5-TriCB	μg/Kg μg/Kg	0.0498 U 0.104	0.0494 U 0.0494 U	0.0972 U 0.0972 U	0.183 U 0.183 U	0.0239 U 0.0251	0.024 U 0.024 U	0.0498 U 0.0498 U		
PCB 40/41/71	2,2',3,3'-TeCB + 2,2',3,4-TeCB + 2,3',4',6-TeCB	μg/Kg	11.7	0.692	3.15	8.42	1.94	1.78	11		
PCB 42	2,2',3,4'-TeCB	μg/Kg	6.53	0.244	1.03	2.85	0.922	0.904	5.36		
PCB 43	2,2',3,5-TeCB	μg/Kg	0.739	0.0494 U	0.121	0.326	NA	0.096 U	0.676		
PCB 43/73 PCB 44/47/65	2,2',3,5-TeCB + 2,2',3,5-TeCB 2,2',3,5'-TeCB + 2,2',4,4'-TeCB + 2,3,5,6-TeCB	μg/Kg μg/Kg	NA 32.9	NA 0.722	NA 3.21	NA 8.69	0.151 3.15	NA 2.85	NA 19.3		
PCB 44/47/05 PCB 45/51	2,2',3,6-TeCB + 2,2',4,4'-1eCB + 2,3,5,6-1eCB	μg/Kg	3.75	0.247	1.32	2.47	0.766	0.784	3.31		
PCB 46	2,2',3,6'-TeCB	μg/Kg	1.13	0.0833	0.445	0.834	0.247	0.275	1.01		
PCB 48	2,2',4,5-TeCB	μg/Kg	4.25	0.139	0.660	1.89	0.892	0.67	3.68		
PCB 49/69 PCB 50/53	2,2',4,5'-TeCB + 2,3',4,6-TeCB 2,2',4,6-TeCB + 2,2',5,6'-TeCB	μg/Kg μg/Kg	21.9 4.22	0.543 0.166	2.40	<u>6.42</u> 1.63	2.05 0.494	<u> </u>	<u>13.1</u> 2.87		
PCB 50/53 PCB 52	2,2',4,0-TeCB + 2,2',5,0-TeCB	μg/Kg μg/Kg	4.22	1.03	4.52	1.03	3.23	3.27	25.4		
PCB 54	2,2',6,6'-TeCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 55	2,3,3',4-TeCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 56	2,3,3',4'-TeCB	μg/Kg	7.01	0.448	2.00 0.0972 U	5.00	0.42 0.0479 U	0.84 0.048 U			
PCB 57 PCB 58	2,3,3',5-TeCB 2,3,3',5'-TeCB	μg/Kg μg/Kg	0.121 EMPC 0.0593 EMPC	0.0494 U 0.0494 U	0.0972 U	0.183 U 0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 59/62/75	2,3,3',6-TeCB + 2,3,4,6-TeCB + 2,4,4',6-TeCB	μg/Kg	1.72	0.0902	0.410	0.987	0.366	0.324	1.56		
PCB 60	2,3,4,4'-TeCB	μg/Kg	3.88	0.216	1.01	2.63	0.238	0.411	3.58		
PCB 61/70/74/76	2,3,4,5-TeCB + 2,3',4',5-TeCB + 2,4,4',5-TeCB + 2',3,4,5-TeCB	μg/Kg	47.4	1.26	5.49	15.3	1.77	2.93	27.3		
PCB 63	2,3,4',5-TeCB	μg/Kg	0.720	0.0494 U	0.109	0.284	0.0618	0.0813	0.561		

Table C-2 Basin 53A Inline Solids - PCB Congener Results

			Whole Basin	Whole Basin Northern Branch E		Eastern Branch	Eastern Branch Southern Branch				
			Sediment Trap ST 5	Sediment Trap ST 1	Sediment Trap ST 2	Sediment Trap ST 3	Inline Solids	Inline Solids	Sediment Trap ST 4		
							Most Upstream —		→ Most DownStream		
			Manhole AAA170	Manhole AAA171	Manhole AAA179	Manhole AAA179	Manhole AAA188	Manhole AMS913	Manhole AAA179		
			Upstream of manhole in 48" Main Line	Upstream of manhole in 24" EOS Lateral	Upstream of manhole in 36" Line	Upstream of manhole in 24" Line	Upstream of manhole in 36" Line	10' Upstream of manhole in 36" Line	Upstream of manhole in 42" Line	Comoon	JSCS ⁽²⁾
			FO080768	FO080764	FO0807065	FO080766	W10L154-01	FO105880	42 Ellie FO080767	Screen	ning Level Value
IUPAC Number ⁽¹⁾	Chemical Name	Units	6/3/2008	6/5/2008	6/9/2008	6/9/2008	12/22/2010	9/8/2010	6/5/2008	Toxicity	Bioaccumulation
PCB 64 PCB 66	2,3,4',6-TeCB 2,3',4,4'-TeCB	μg/Kg μg/Kg	12.2	0.444 0.876	1.98 4.07	<u>5.17</u> 10.4	1.44	<u>1.32</u> 1.86	<u>8.27</u> 15.2		
PCB 67	2,3',4,5-TeCB	μg/Kg	0.597	0.0494 U	0.119	0.330	0.062	0.063	0.717		
PCB 68	2,3',4,5'-TeCB	μg/Kg	0.112	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.151		
PCB 72 PCB 73	2,3',5,5'-TeCB 2,3',5',6-TeCB	μg/Kg μg/Kg	0.183 0.0498 U	0.0494 U 0.0494 U	0.0972 U 0.0972 U	0.183 U 0.183 U	0.0479 U NA	0.048 U 0.096 U	0.264 0.0498 U		
PCB 77	3,3',4,4'-TeCB	μg/Kg	1.47	0.105	0.436	1.25	0.0965	0.207	2.23		0.052
PCB 78	3,3',4,5-TeCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 79	3,3',4,5'-TeCB	μg/Kg	0.433	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.195		
PCB 80 PCB 81	3,3',5,5'-TeCB 3,4,4',5-TeCB	μg/Kg μg/Kg	0.0498 U 0.131	0.0494 U 0.0494 U	0.0972 U 0.0972 U	0.183 U 0.183 U	0.0479 U 0.0479 U	0.048 U 0.048 U	0.0498 U 0.0772		0.017
PCB 82	2,2',3,3',4-PeCB	μg/Kg	5.52	0.213	0.708	2.20	0.15	0.44	2.74		
PCB 83	2,2',3,3',5-PeCB	μg/Kg	2.57	0.0925	0.340	1.25	0.0518	0.142	1.53		
PCB 84	2,2',3,3',6-PeCB	μg/Kg	16.4	0.357	1.63	5.02	0.271	0.85	6.51		
PCB 85/116/117 PCB 86/87/97/108/119/125	2,2',3,4,4'-PeCB + 2,3,4,5,6-PeCB + 2,3,4',5,6-PeCB 2,2',3,4,5-PeCB + 2,2',3,4,5'-PeCB + 2,2',3',4,5-PeCB + 2,3,3',4 PeCB + 2,3',4,4',6-PeCB + 2',3,4,5,6'-PeCB	μg/Kg 4,5'- μg/Kg	<u>8.56</u> 41.9	0.273	1.19	3.88 13.4	0.179 0.663	0.494	3.79 17.6		
PCB 88/91	2,2',3,4,6-PeCB + 2,2',3,4',6-PeCB	μg/Kg μg/Kg	10.1	0.216	1.02	3.07	0.175	0.45	4.32		
PCB 89	2,2',3,4,6'-PeCB	μg/Kg	0.567	0.0494 U	0.118	0.282	0.0479 U	0.0637	0.333		
PCB 90/101/113	2,2',3,4',5-PeCB + 2,2',4,5,5'-PeCB + 2,3,3',5',6-PeCB	μg/Kg	67.5	1.22	5.01	16.7	0.855	2.17	24.1		
PCB 92 PCB 93/98/100/102	2,2',3,5,5'-PeCB 2,2',3,5,6-PeCB + 2,2',3',4,6-PeCB + 2,2',4,4',6-PeCB + 2,2',4,5 PeCB	μg/Kg 5,6'- μg/Kg	<u>11.9</u> 2.61	0.238 0.0741 U	0.882	<u>3.03</u> 0.978	0.149 0.192 U	0.442 0.192 U	4.52		
PCB 94	2,2',3,5,6'-PeCB	μg/Kg	0.374	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.179		
PCB 95	2,2',3,5',6-PeCB	μg/Kg	57.4	0.951	3.97	13.1	0.817	2.14	21.6		
PCB 96	2,2',3,6,6'-PeCB	μg/Kg	0.498	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.227		
PCB 99 PCB 103	2,2',4,4',5-PeCB 2,2',4,5',6-PeCB	μg/Kg μg/Kg	<u> </u>	0.531 0.0494 U	2.39 0.0972 U	7.45 0.183 U	0.377 0.0479 U	1.04 0.048 U	<u> </u>		
PCB 103 PCB 104	2,2,4,5,6-PeCB	μg/Kg	0.449 0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.249 0.0498 U		
PCB 105	2,3,3',4,4'-PeCB	μg/Kg	23.4	0.497	1.72	5.34	0.368	0.972	11		0.17
PCB 106	2,3,3',4,5-PeCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.048 U	0.048 U	0.050 U		
PCB 107/124 PCB 109	2,3,3',4',5-PeCB + 2',3,4,5,5'-PeCB 2,3,3',4,6-PeCB	μg/Kg μg/Kg	2.05 3.17	0.0494 U 0.0788	0.165 0.242	0.818	0.0958 U 0.0479 U	0.096 U 0.147	0.89		
PCB 109 PCB 110/115	2,3,3',4',6-PeCB + 2,3,4,4',6-PeCB	μg/Kg	60.3	1.64	6.54	21.0	1.0	2.9	27.2		
PCB 111	2,3,3',5,5'-PeCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.048 U	0.048 U	0.050 U		
PCB 112	2,3,3',5,6-PeCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 114 PCB 118	2,3,4,4',5-PeCB 2,3',4,4',5-PeCB	μg/Kg μg/Kg	<u>1.40</u> 52.7	0.0494 U 1.01	0.0972 U 3.16	0.280	0.048 U 0.722	0.059	0.590 22.5		0.17 0.12
PCB 120	2,3,4,4,5,5'-PeCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0632		
PCB 121	2,3',4,5',6-PeCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 122	2',3,3',4,5-PeCB	μg/Kg	0.524	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.303		
PCB 123 PCB 126	2',3,4,4',5-PeCB 3,3',4,4',5-PeCB	μg/Kg μg/Kg	0.859	0.0494 U 0.0494 U	0.0972 U 0.0972 U	0.183 U 0.183 U	0.0479 U 0.0479 U	0.0529 0.048 U	0.519 0.282		0.21
PCB 126 PCB 127	3,3,4,4,5,5'-РеСВ 3,3',4,5,5'-РеСВ	μg/Kg μg/Kg	0.182	0.0494 U	0.0972 U 0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		0.00005
PCB 128/166	2,2',3,3',4,4'-HxCB + 2,3,4,4',5,6-HxCB	μg/Kg	7.45	0.246	0.705	2.70	0.13	0.35	3.87		
PCB 129/138/163	2,2',3,3',4,5-HxCB + 2,2',3,4,4',5'-HxCB + 2,3,3',4',5,6-HxCB	μg/Kg	47.0	1.45	4.22	14.6	0.782	2.31	23.6		
PCB 130 PCB 131	2,2',3,3',4,5'-HxCB 2,2',3,3',4,6-HxCB	μg/Kg μg/Kg	<u>3.13</u> 1.03	0.0908 0.0494 U	0.290 0.0972 U	1.09 0.233	0.0531 0.0479 U	0.157 0.048 U	<u> </u>		
PCB 131 PCB 132	2,2',3,3',4,6'-HxCB	μg/Kg μg/Kg	17.1	0.0494 0	1.53	5.51	0.0479 0	0.048 0	9.65		
PCB 133	2,2',3,3',5,5'-HxCB	μg/Kg	0.558	0.0494 U	0.0972 U	0.190	0.048 U	0.048 U	0.322		
PCB 134/143	2,2',3,3',5,6-HxCB + 2,2',3,4,5,6'-HxCB	μg/Kg	2.75	0.0762	0.240	0.856	0.0958 U	0.133	1.57		
PCB 135/151 PCB 136	2,2',3,3',5,6'-HxCB + 2,2',3,5,5',6-HxCB 2,2',3,3',6,6'-HxCB	μg/Kg μg/Kg	12.6 6.67	0.323 0.149	<u>1.37</u> 0.654	4.62	0.213	0.672	<u> </u>		
PCB 130 PCB 137	2,2',3,4,4',5-HxCB	μg/Kg	2.64	0.0869	0.054	0.81	0.0929	0.115	1.29		
PCB 139/140	2,2',3,4,4',6-HxCB + 2,2',3,4,4',6'-HxCB	μg/Kg	1.22	0.0494 U	0.0972 U	0.301	0.0958 U	0.096 U	0.516		
PCB 141	2,2',3,4,5,5'-HxCB	μg/Kg	6.98	0.216	0.759	2.54	0.125	0.419	3.92		
PCB 142	2,2',3,4,5,6-HxCB	μg/Kg	0.0498 U 0.540	0.0494 U	0.0972 U	0.183 U 0.499	0.0479 U	0.048 U	0.0498 U		
PCB 144 PCB 145	2,2',3,4,5',6-HxCB 2,2',3,4,6,6'-HxCB	μg/Kg μg/Kg	0.540 0.0498 U	0.0553 0.0494 U	0.230 0.0972 U	0.499 0.183 U	0.0479 U 0.0479 U	0.111 0.048 U	0.877 0.0498 U		
PCB 146	2,2',3,4',5,5'-HxCB	μg/Kg	5.20	0.143	0.473	1.75	0.0479 0	0.284	2.97		
PCB 147/149	2,2',3,4',5,6-HxCB + 2,2',3,4',5',6-HxCB	μg/Kg	35.1	0.850	3.18	10.2	0.468	1.67	23		

Table C-2 Basin 53A Inline Solids - PCB Congener Results

			Whole Basin	Northern Branch		Eastern Branch					
			Sediment Trap	Sediment Trap	Sediment Trap	Sediment Trap	Inline Solids	Inline Solids	Sediment Trap		
			ST 5	ST 1	ST 2	ST 3	Most Unstream		ST 4 → Most DownStream		
							Most Upstream —		Mosi Downstream		
			Manhole AAA170	Manhole AAA171	Manhole AAA179	Manhole AAA179	Manhole AAA188	Manhole AMS913	Manhole AAA179		
			Upstream of manhole in	1	Upstream of manhole in	Upstream of manhole in	Upstream of manhole in	10' Upstream of manhole in	1		JSCS ⁽²⁾
			48" Main Line FO080768	24" EOS Lateral FO080764	36" Line FO0807065	24" Line FO080766	36" Line W10L154-01	36" Line FO105880	42" Line	Screer	ning Level Value
			F0080708	FO080704	F00807005	F0080700	W10L154-01	F0105880	FO080767		
IUPAC Number ⁽¹⁾	Chemical Name	Units	6/3/2008	6/5/2008	6/9/2008	6/9/2008	12/22/2010	9/8/2010	6/5/2008	Toxicity	Bioaccumulation
PCB 148	2,2',3,4',5,6'-HxCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 150	2,2',3,4',6,6'-HxCB	μg/Kg	0.0759	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 152 PCB 153/168	2,2',3,5,6,6'-HxCB 2,2',4,4',5,5'-HxCB + 2,3',4,4',5',6-HxCB	μg/Kg μg/Kg	0.0798 30.0	0.0494 U 0.945	0.0972 U 2.78	0.183 U 10.2	0.0479 U 0.521	0.048 U 1.67	0.0498 U 16.9		
PCB 153/100 PCB 154	2,2',4,4',5,6'-HxCB	μg/Kg μg/Kg	0.372	0.945 0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.219		
PCB 155	2,2',4,4',6,6'-HxCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 156/157	2,3,3',4,4',5-HxCB + 2,3,3',4,4',5'-HxCB	μg/Kg	8.64	0.163	0.459	1.67	0.0977	0.247	4.6		0.21
PCB 158	2,3,3',4,4',6-HxCB	μg/Kg	5.00	0.150	0.421	1.51	0.08	0.218	2.24		
PCB 159	2,3,3',4,5,5'-HxCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 160 PCB 161	2,3,3',4,5,6-HxCB 2,3,3',4,5',6-HxCB	μg/Kg μg/Kg	0.0498 U 0.0498 U	0.0494 U 0.0494 U	0.0972 U 0.0972 U	0.183 U 0.183 U	0.0479 U 0.0479 U	0.048 U 0.048 U	0.0498 U 0.0498 U		
PCB 162	2,3,3',4',5,5'-HxCB	μg/Kg	0.299	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.125		
PCB 164	2,3,3',4',5',6-HxCB	μg/Kg	3.26	0.0913	0.271	1.03	0.0479 U	0.152	1.39		
PCB 165	2,3,3',5,5',6-HxCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 167	2,3',4,4',5,5'-HxCB	μg/Kg	2.13	0.0515	0.113	0.389	0.0479 U	0.0932	1.23		0.21
PCB 169	3,3',4,4',5,5'-HxCB	μg/Kg	0.0618 EMPC	0.0494 U	0.0972	0.183 U	0.0479 U	0.048 U	0.0498 U		0.00021
PCB 170 PCB 171/173	2,2',3,3',4,4',5-HpCB 2,2',3,3',4,4',6-HpCB + 2,2',3,3',4,5,6-HpCB	μg/Kg μg/Kg	4.29	0.192	0.550 0.218	<u>1.87</u> 0.724	0.104 0.0958 U	0.359	<u>3.34</u> 1.31		
PCB 171773	2,2',3,3',4,5,5'-HpCB	μg/Kg μg/Kg	0.746	0.0741 0.0494 U	0.0972 U	0.380	0.0958 U	0.070	0.642		
PCB 174	2,2',3,3',4,5,6'-HpCB	μg/Kg	5.09	0.232	0.636	2.27	0.101	0.419	5.17		
PCB 175	2,2',3,3',4,5',6-HpCB	μg/Kg	0.240	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.223		
PCB 176	2,2',3,3',4,6,6'-HpCB	μg/Kg	0.688	0.0494 U	0.123	0.392	0.0479 U	0.062	0.759		
PCB 177	2,2',3,3',4',5,6-HpCB	μg/Kg	2.62	0.0795	0.263	0.880	0.060	0.231	2.550		
PCB 178 PCB 179	2,2',3,3',5,5',6-HpCB 2,2',3,3',5,6,6'-HpCB	μg/Kg μg/Kg	0.876	0.0494 U 0.0944	0.180	0.570	0.048 U 0.0479 U	0.089 0.194	<u>1.150</u> 3.19		
PCB 180/193	2,2',3,4,4',5,5'-HpCB + 2,3,3',4',5,5',6-HpCB	μg/Kg	7.98	0.413	1.320	4.18	0.209	0.781	7.33		
PCB 181	2,2',3,4,4',5,6-HpCB	μg/Kg	0.135	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0671		
PCB 182	2,2',3,4,4',5,6'-HpCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 183/185	2,2',3,4,4',5',6-HpCB + 2,2',3,4,5,5',6-HpCB	μg/Kg	3.38	0.163	0.464	1.68	0.0958 U	0.301	3.7		
PCB 184	2,2',3,4,4',6,6'-HpCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 186 PCB 187	2,2',3,4,5,6,6'-HpCB 2,2',3,4',5,5',6-HpCB	μg/Kg μg/Kg	0.0498 U 4.82	0.0494 U 0.275	0.0972 U 1.14	0.183 U 3.61	0.0479 U 0.144	0.048 U 0.5	0.0498 U 6.67		
PCB 188	2,2',3,4',5,6,6'-HpCB	μg/Kg μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 189	2,3,3',4,4',5,5'-HpCB	μg/Kg	0.321	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.229		1.2
PCB 190	2,3,3',4,4',5,6-HpCB	μg/Kg	0.761	0.0494 U	0.0977	0.318	0.0479 U	0.0718	0.548		
PCB 191	2,3,3',4,4',5',6-HpCB	μg/Kg	0.172	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.141		
PCB 192	2,3,3',4,5,5',6-HpCB	μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0479 U	0.048 U	0.0498 U		
PCB 194 PCB 195	2,2',3,3',4,4',5,5'-OcCB 2,2',3,3',4,4',5,6-OcCB	μg/Kg μg/Kg	<u>1.64</u> 0.570	0.0757 0.0494 U	0.236	0.729 0.334	0.0718 U 0.0718 U	0.133 0.072 U	<u>1.42</u> 0.617		
PCB 195	2,2',3,3',4,4',5,6'-OcCB	μg/Kg	0.795	0.0691 U	0.244	0.762	0.0718 U	0.0904	1.05		
PCB 197/200	2,2',3,3',4,4',6,6'-OcCB + 2,2',3,3',4,5,6,6'-OcCB	μg/Kg	0.347	0.247 U	0.486 U	0.913 U	0.144 U	0.144 U	0.681		
PCB 198/199	2,2',3,3',4,5,5',6-OcCB + 2,2',3,3',4,5,5',6'-OcCB	μg/Kg	2.06	0.145	0.626	2.04	0.144 U	0.188	2.75		
PCB 201	2,2',3,3',4,5',6,6'-OcCB	μg/Kg	0.316	0.247 U	0.486 U	0.299	0.0718 U	0.072 U	1.29		
PCB 202	2,2',3,3',5,5',6,6'-OcCB	μg/Kg	0.533 J	0.0494 U	0.0998 J	0.328 J	0.0718 U	0.072 U	1.47		
PCB 203 PCB 204	2,2',3,4,4',5,5',6-OcCB 2,2',3,4,4',5,6,6'-OcCB	μg/Kg μg/Kg	1.23 J 0.0498 U	0.0494 U 0.0877 J	0.362 J 0.0972 U	1.17 J 0.183 U	0.0718 U 0.0718 U	0.109 0.072 U	1.44 0.0498 U		
PCB 204	2,3,3',4,4',5,5',6-OcCB	μg/Kg μg/Kg	0.0498 U	0.0494 U	0.0972 U	0.183 U	0.0718 U	0.072 U	0.0498 0		
PCB 206	2,2',3,3',4,4',5,5',6-NoCB	μg/Kg	1.65	0.0494 U	0.276	1.02	0.0718 U	0.072 U	2.02		
PCB 207	2,2',3,3',4,4',5,6,6'-NoCB	μg/Kg	0.202	0.0720	0.0972 U	0.183 U	0.0718 U	0.072 U	1.31		
PCB 208	2,2',3,3',4,5,5',6,6'-NoCB	μ g/Kg	0.415	0.0494 U	0.0972 U	0.293	0.0718 U	0.072 U	0.377		
PCB 209	Decachlorobiphenyl	μg/Kg	0.551	0.0494 U	0.106	0.502	0.0718 U	0.072 U	0.743		

Table C-2Basin 53A Inline Solids - PCB Congener Results

			Whole Basin	Northe	Northern Branch						
			Sediment Trap ST 5	Sediment Trap ST 1	Sediment Trap ST 2	Sediment Trap ST 3	Inline Solids	Inline Solids	Sediment Trap ST 4		
							Most Upstream -		→ Most DownStream		
			Manhole AAA170	Manhole AAA171	Manhole AAA179	Manhole AAA179	Manhole AAA188	Manhole AMS913	Manhole AAA179		
			Upstream of manhole in	Upstream of manhole in	Upstream of manhole in	Upstream of manhole in	Upstream of manhole in	10' Upstream of manhole in	Upstream of manhole in		JSCS ⁽²⁾
			48" Main Line	24" EOS Lateral	36" Line	24" Line	36" Line	36" Line	42" Line	Screer	ning Level Value
			FO080768	FO080764	FO0807065	FO080766	W10L154-01	FO105880	FO080767		
IUPAC Number ⁽¹⁾	Chemical Name	Units	6/3/2008	6/5/2008	6/9/2008	6/9/2008	12/22/2010	9/8/2010	6/5/2008	Toxicity	Bioaccumulation
	Total Monochlorobiphenyls	μg/Kg	0.755 (3)	ND	ND	ND	ND	0.144	0.871 ⁽³⁾		
	Total Dichlorobiphenyls	μg/Kg	13.7 (3)	1.02 (3)	3.47 (3)	8.45 (3)	3.31	1.96	18.00 ⁽³⁾		
	Total Trichlorobiphenyls	μg/Kg	70.3 ⁽³⁾	3.55 ⁽³⁾	14.6	36.8	21.9	13.9	74.8		
	Total Tetrachlorobiphenyls	μg/Kg	253	7.31	33.5	86.2	19.3	20.9	154		
	Total Pentachlorobiphenyls	μg/Kg	402	8.31	33.6	109	5.76	16.1	166		
	Total Hexachlorobiphenyls	μg/Kg	200	5.61	17.9	63.0	2.94	9.68	115.0		
	Total Heptachlorobiphenyls	μg/Kg	36.1	1.52	5.41	18.1	0.618	3.21	37		
	Total Octachlorobiphenyls	μg/Kg	7.49 (3)	0.309 (3)	1.67 (3)	5.66 ⁽³⁾	ND	0.52	10.8		
	Total Nonachlorobiphenyls	μg/Kg	2.27	0.0720	0.276	1.31	ND	ND	3.71		
	Total Decachlorobiphenyls	μg/Kg	0.551	ND	0.106	0.502	ND	ND	0.743		
	Estimated Total PCBs ⁽⁴⁾	μg/Kg	986 ⁽³⁾	27.7 ⁽³⁾	111 ⁽³⁾	329 ⁽³⁾	53.9	66.4	580 ⁽³⁾	676	0.39

Notes:

MoCB = Monochlorobiphenyl

DiCB = Dichlorobiphenyl

TriCB = Trichlorobiphenyl

TeCB = Tetrachlorobiphenyl

PeCB = Pentachlorobiphenyl

HeCB = Hexachlorobiphenyl

HpCB = Heptachlorobiphenyl

OcCB = Octachlorobiphenyl

NoCB = Nonachlorobiphenyl

U = The analyte was not detected above the reported sample quantification limit.

B = The analyte was detected in the laboratory method blank at a concentration greater than 1/10th the concentration detected in the sample.

EMPC = Estimated maximum possible concentration.

J = Estimated value. Congener value is estimated due to matrix interference or an internal standard recovery outside of method control limits.

-- No JSCS screening level available.

µg/Kg = micrograms per kilogram

⁽¹⁾IUPAC - International Union of Pure and Applied Chemistry

⁽²⁾JSCS - Portland Harbor Joint Source Control Strategy (DEQ/EPA Final December 2005, Amended July 2007).

⁽³⁾Total homolog and total congener values could be slightly biased due to congener detections in the laboratory method blank and/or internal standard recoveries outside of method control limits.

⁽⁴⁾Total homolog and PCB concentrations are calculated by assigning a "0" value to undetected congeners and to results flagged with "EMPC".

bold = concentration exceeds JSCS Bioaccumulation Screening Level Value.

= concentration exceeds JSCS Toxicity Screening Level Value.

APPENDIX C OUTFALL BASIN 53A 2007/2008 SEDIMENT TRAP AND 2010 INLINE SOLIDS SAMPLING

Table C-1Basin 53A Inline Solids Results

$\begin the set of th$			Whole Basin	Norther	n Branch	Eastern Branch	Southern Branch				
Uber of a point of the second secon								Inline Solids	ST 4		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			Upstream of manhole in 48" Main Line	Upstream of manhole in 24" EOS Lateral	Upstream of manhole in 36" Line	Upstream of manhole in 24" Line	Upstream of manhole in 36" Line	10' Upstream of manhole in 36" Line	Upstream of manhole in 42" Line		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Class Analyte	Units	6/3/2008	6/5/2008	6/9/2008	6/9/2008	12/22/2010	9/8/2010	6/5/2008	Toxicity	Bioaccumulation
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Total Organic Carbon (E	EPA 9060 MOD)									
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	TOC	mg/Kg	94,600	14,100	75,900	98,500	12,000	7,090	126,000		-
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Total Solids (SM 2540 C	б)									
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	· · · · · ·	· · · · · · · · · · · · · · · · · · ·	47.5	71.8	43.1	54.9	81.9	83.0	49.9		
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Metals (EPA 6020)										
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	· · · · · · · · · · · · · · · · · · ·	mg/Kg	13.9	3.83	NA	NA	2.5	2.02	10.8	33	7
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Cadmium			0.67	NA	NA	0.451	0.69	2.54	4.98	1
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Chromium			269	NA	NA	2,470	628		111	
Iad mg/kg 107 39.1 NA NA 50.5 56.8 176 128 17 Magaee mg/kg 59.0 2,540 NA NA 23,00 4,600 1,00 Magaee mg/kg 61.80 0.068 NA NA 0,005 0.019 0,010 0,007 0,017 0,05 1,06 0,07 Nicki mg/kg 61 63.5 NA NA 0,51 0,17 0,55 1,66 Jaire mg/kg 140 0.63 NA NA 0,51 0,17 0,55 5,6	Copper	mg/Kg	133	82.5	NA	NA	141	107	181	149	
Mercury mg/Kg 0.158 0.068 NA NA 0.050 0.019 0.195 1.06 0.07 Nickel mg/Kg 0.1 6.1 63.5 NA NA 0.62.9 51.2 71.8 48.6 Silver mg/Kg 0.39 0.14 NA NA 0.351 0.17 0.55 5 Zinc mg/Kg 140 963 NA NA 153 33.9 66.4 580 676 0.39 Polychlorinated Biphenyl (PCB) Congeners ^(2,3)		mg/Kg	107	39.1	NA	NA	50.5	56.8	176	128	17
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Manganese	mg/Kg	5920	2,540	NA	NA	23,700	4,620	6,160	1,100	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Mercury	mg/Kg	0.158	0.068	NA	NA	0.0505	0.019	0.195	1.06	0.07
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Nickel	mg/Kg	61	63.5	NA	NA	62.9	51.2	71.8	48.6	
Polychlorinated Biphenyl (PCB) Congeners ^(2,3) Estimated Total PCBs µg/Kg 986 '27.7 '111 '329 '53.9 '66.4 '580 '67.6 '0.39 Polychlorinated Biphenyls (PCBs) (EPA 8082) ⁽³⁾	Silver	mg/Kg	0.39	0.14	NA	NA	0.351	0.17	0.55	5	
Estimated Total PCBs µg/Kg 986 27.7 111 329 53.9 66.4 580 676 0.39 Polychlorinated Biphenyls/PCBs) (EPA 8082) ⁽³⁾ Aroclor 1016/1242 µg/Kg NA NA NA NA 10 U 10 U NA 530 Aroclor 12121 ug/kg NA NA NA NA NA 20 U 20 U NA Aroclor 1221 ug/kg NA NA NA NA 10 U 10 U NA Aroclor 1220 µg/Kg NA NA NA NA 10 U 10 U NA Aroclor 1248 µg/Kg NA NA NA NA 15.7 51 J NA 1500 Aroclor 1260 µg/Kg NA NA NA NA 10 U 10 U NA 200 Aroclor 1262 µg/Kg	Zinc	mg/Kg	1440	963	NA	NA	153	305	2130	459	
Note of the set of t	Polychlorinated Bipheny	l (PCB) Congeners (2,3)									
Aroclor 1016/1242 µg/Kg NA NA NA NA 10 U 10 U NA 530 Aroclor 1221 µg/Kg NA NA NA NA NA 20 U 20 U NA Aroclor 1221 µg/Kg NA NA NA NA 20 U 20 U NA Aroclor 1232 µg/Kg NA NA NA NA 10 U 10 U NA Aroclor 1248 µg/Kg NA NA NA NA 15.7 51 J NA 1500 Aroclor 1254 µg/Kg NA NA NA NA 10 U 10 U NA 300 Aroclor 1260 µg/Kg NA NA NA NA 10 U 10 U NA Aroclor 1262 µg/Kg NA NA NA NA 10 U 10 U NA <td></td> <td>Estimated Total PCBs µg/Kg</td> <td>986 ⁽⁴⁾</td> <td>27.7 ⁽⁴⁾</td> <td>111⁽⁴⁾</td> <td>329⁽⁴⁾</td> <td>53.9</td> <td>66.4</td> <td>580⁽⁴⁾</td> <td>676</td> <td>0.39</td>		Estimated Total PCBs µg/Kg	986 ⁽⁴⁾	27.7 ⁽⁴⁾	111 ⁽⁴⁾	329 ⁽⁴⁾	53.9	66.4	580 ⁽⁴⁾	676	0.39
Acclar 100 122 $\mu g/Kg$ NANANANANA10 °°10 °°NAAroclor 1221 $u g/Kg$ NANANANANA20 °°NA""Aroclor 1232 $\mu g/Kg$ NANANANA10 °°10 °°NA""Aroclor 1248 $\mu g/Kg$ NANANANA15.751 °°NA1500-Aroclor 1254 $\mu g/Kg$ NANANANA10 °°34NA300"Aroclor 1260 $\mu g/Kg$ NANANANA10 °°10 °°NA200"Aroclor 1262 $\mu g/Kg$ NANANANA10 °°10 °°NA"""Aroclor 1268 $\mu g/Kg$ NANANANA10 °°10 °°NA"""	Polychlorinated Bipheny	ls(PCBs) (EPA 8082) ⁽³⁾									
Adoctor 1221 ug/kg NA NA NA NA 20 0 20 0 NA NA NA Aroclor 1232 $\mu g/Kg$ NA NA NA NA 10 U 10 U NA $$ $-$ Aroclor 1232 $\mu g/Kg$ NA NA NA NA 10 U 10 U NA $ -$ Aroclor 1248 $\mu g/Kg$ NA NA NA NA $10 U^{(5)}$ 34 NA 300 $-$ Aroclor 1260 $\mu g/Kg$ NA NA NA NA $10 U$ $10 U$ NA 200 $-$ Aroclor 1260 $\mu g/Kg$ NA NA NA NA $10 U$ $10 U$ NA 200 $-$ Aroclor 1262 $\mu g/Kg$ NA NA NA NA $10 U$ $10 U$ NA $ -$ Aroclor 1268 $\mu g/Kg$ NA NA NA $10 U$ $10 U$ NA	Aroclor 1016/12	μg/Kg	NA	NA	NA	NA	10 U	10 U	NA	530	
Aroclor 1232µg/KgNANANANA10 U10 UNA \neg \neg Aroclor 1248µg/KgNANANANA15.751 JNA1500 \neg Aroclor 1254µg/KgNANANANA10 U 0 UNA 300 \neg Aroclor 1260µg/KgNANANANA10 U 10 UNA 200 \neg Aroclor 1262µg/KgNANANANA 10 U 10 UNA \neg \neg Aroclor 1268µg/KgNANANANA 10 U 10 UNA \neg \neg	Aroclor 1221			NA	NA	NA	20 U	20 U	NA		
Aroclor 1248 µg/Kg NA NA NA NA NA 15.7 51 J NA 1500 Aroclor 1254 µg/Kg NA NA NA NA 10 U ⁽⁵⁾ 34 NA 300 Aroclor 1250 µg/Kg NA NA NA NA 10 U 10 U NA 200 Aroclor 1262 µg/Kg NA NA NA NA 10 U 10 U NA Aroclor 1262 µg/Kg NA NA NA NA 10 U 10 U NA Aroclor 1268 µg/Kg NA NA NA NA 10 U 10 U NA	Aroclor 1232		NA	NA	NA	NA	10 U	10 U	NA		
Aroclor 1254 µg/Kg NA NA NA NA 10 U ⁽⁵⁾ 34 NA 300 Aroclor 1260 µg/Kg NA NA NA NA 10 U 10 U NA 200 Aroclor 1260 µg/Kg NA NA NA NA 10 U 10 U NA 200 Aroclor 1262 µg/Kg NA NA NA NA 10 U 10 U NA Aroclor 1268 µg/Kg NA NA NA NA 10 U 10 U NA										1500	
Aroclor 1260 µg/Kg NA NA NA NA 10 U 10 U NA 200 Aroclor 1262 µg/Kg NA NA NA NA 10 U 10 U NA 200 Aroclor 1262 µg/Kg NA NA NA NA 10 U 10 U NA Aroclor 1268 µg/Kg NA NA NA NA 10 U 10 U NA	-									300	
Aroclor 1262 µg/Kg NA NA NA NA 10 U 10 U NA - - Aroclor 1268 µg/Kg NA NA NA NA 10 U 10 U NA - - -	-									200	
Aroclor 1268 µg/Kg NA NA NA NA 10 U 10 U NA	-										
		Estimated Total PCBs ⁽³⁾ µg/Kg		NA	NA	NA	15.7	85 J	NA	676	0.39

Notes:

-- No JSCS screening level available.

µg/Kg = micrograms per kilogram .

mg/Kg = milligrams per kilogram

NA = not analyzed

J = Estimated value. For PCB Aroclors, the value was detected at a concentration greater than the method detection limit but less than the method reporting limit or the quantification was based on a limited number of peaks due to matrix interference.

U = The analyte was not detected above the the reported sample quantification limit.

⁽¹⁾ JSCS - Portland Harbor Joint Source Control Strategy (DEQ/EPA Final December 2005, Amended July 2007).

(2) Refer to Table C-2 for individual congener results.

⁽³⁾ Total PCBs are calculated by assigning "0" to undetected and EMPC-qualified constituents.

(4) Total homolog and total congener values could be slightly biased due to detections of congeners in the laboratory method blank and/or internal standard recoveries outside of method control limits.

⁽⁵⁾A trace amount of Aroclor 1254 was detected below the method reporting limit in sample W10L154-01.

= concentration exceeds JSCS Toxicity Screening Level Value.

bold = concentration exceeds JSCS Bioaccumulation Screening Level Value.

Figure



Attachment C-1 Field Photographs



2007 Sediment Trap Deployments

Photo 1: Sampling location "ST1", Manhole AAA171



Photo 2 (October 15, 2007): Deployed sediment traps at sampling location ST1



Photo 3 (June 5, 2008): Final composited sample from sediment traps at sampling location ST1



Photo 4: Sampling locations "ST2, ST3, ST4" at Manhole AAA179



Photo 5: Looking into Manhole AAA179; discharges from the three laterals are apparent in this photograph.



Photo 6 (October 15, 2007): Deployed sediment traps at sampling location ST2; upstream of Manhole AAA179 in northern branch.

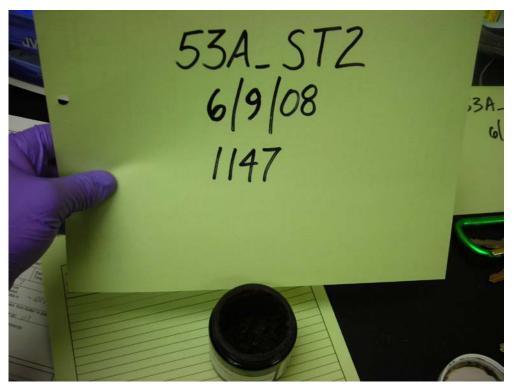


Photo 7 (June 9, 2008): Final composited sample from sediment traps at sampling location ST2



Photo 8 (October 15, 2007): Deployed sediment traps at sampling location ST3; upstream of Manhole AAA179 in eastern branch.



Photo 9 (January 17, 2008): Flow restrictor installed just downstream of sediment traps at sampling location ST3

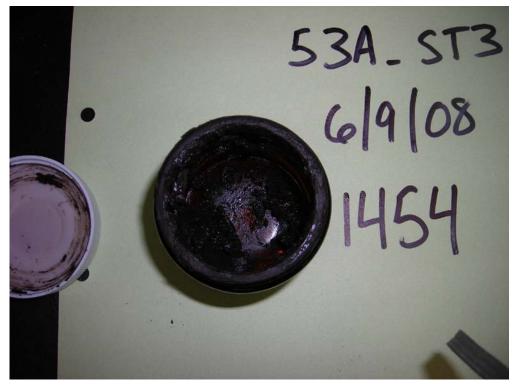


Photo 10 (June 9, 2008): Final composited sample from sediment traps at sampling location ST3



Photo 11 (October 15, 2007): Deployed sediment traps at sampling location ST4; upstream of Manhole AAA179 in southern branch.



Photo 12 (June 5, 2008): Final composited sample from sediment traps at sampling location ST4



Photo 13: Sampling location "ST5", Manhole AAA170



Photo 14 (October 15, 2007): Deployed sediment traps at sampling location ST5; upstream of Manhole AAA170.



Photo 15 (June 3, 2008): Final composited sample from sediment traps at sampling location ST5

September 2010 Inline Solids Sampling



Photo 16 (September 8, 2010): Manhole AMS913 looking south on N. Rivergate Blvd.



Photo 17 (September 8, 2010): Solids sampling location in 36-inch-diameter line discharging to Manhole AMS913.



Photo 18 (September 8, 2010): Homogenized sample collected from 36-inch-diameter line discharging to Manhole AMS913.



December 2010 Inline Solids Sampling

Photo 16 (December 22, 2010): Manhole AAA188 looking south on N. Rivergate Blvd.



Photo 17 (December 22, 2010): Solids sampling location in 36-inch-diameter line discharging to Manhole AAA188.



Photo 18 (December 22, 2010): Homogenized sample collected from in 36-inchdiameter line discharging to Manhole AAA188.

Attachment C-2 Field Notes This page intentionally blank

2007 – 2008 Sediment Trap Sampling

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Page 1 of 1 Project PORTLAND HARBOR STORMWATER MON Project No. 1020,005 Location WPCL Date 09/28/07 Subject FQUIPMENT PREP FOR OFS3A INSTALLS By JXB 1357 PDT-All stainless steel sediment trap mounting hardware, with the exception of bolts & not nuts, were cleaned w/ a scrub brush, hot soapy tap water (Lab-grade detergent), hot tap water & copious amounts of deionized (DI) water. Stainless steel sediment trap mainting hardware was allowed to air dry on clean Versi-dry @-lab soaker paper, prior to installs for OFS3A during wet weather season (07/08) Attachments



Page <u>1</u> of <u>3</u>
Project <u>PORTLAND HARBOR STORMWATER SAMP</u> . Project No. <u>1020.005</u> Location <u>OFS3A</u> Date <u>10/11/07</u> Subject <u>SEDEMENT TRAP INSTALLATIONS (07/08</u>) By <u>JXB/JJM</u>
0815 PDT - Left WPCL to install sed, traps @ OFS3A.
0836-Arrive on site @ intersection of N Rivergates Ramsey Rlud. NW Natural contractor actively discharging tanker truck into CB upstream of node AAA179. JXB approached contractors
to inform them that BES/FO would be installing sampling equipment in AAA179, Contractors informed JXB/JJM that
NW Natural was conducting a hydro test on new gas main on N Ramsey Blud & that 2-3 more tanker trucks would be discharging into CB throughout duration of test.
0845 - JXB/JJM set up TC @ AAA179. JXB informs PHA of
hydro test & discusses installations of sed traps. Visual inspection of 24" inlet from the east (53A-ST3) exhibits elevated flow
conditions (est. of 24-5" # 4.0 Fps) during NW Natural discharge activities. JJM/JXB/PHA collectively agree that an entry to install sed traces and occur as long activities as sofe (SE
to install sed trops can occur as long as fong as safe CSE conditions exist.
0858 - JJM enters AAA179. JJM verifies pipe diameters of all three inlets: Inlet entering AAA179 from the north (53A_STR)
measured 36" inter entering AAA179 from the east (53A-573) measured 24" of inter entering AAA179 from the south (53A-574)
measured 42". 12" sanitary overflow inlet from the east also
entering node, JJM begins to install two sed traps "/out bottles @ 53A-ST3 after removing safety rails from node ledge All indete entrum AANZA are accurate
Attachments

DAILY FIELD REPORT



Page <u>2</u>

of _3 Project PORTLAND HARBOR STORMWATER SAMP. Project No. 1020,005 Location OF53A Date 10/23/07 SUBJECTSEDEMENT TRAP INSTALLATIONS (07/08) BY JXB/JJM 1011 - NW Natural contractors begin to discharge water from hydro test into CB upstream of AAA179. Safe CSE conditions continue to exist. JTM continues installing sed. traps@53A-ST3 020 - Flow conditions in 53.A-573 increase dramatically due to Ongoing discharge into CB From NW Natural hydro test. JJM abandons sed. trap installations @ 53A-5T3 1027 - JJM begins to install two sed traps wout bottles upstream of EOP in 42" inlet from the south (SFA-53A-STY). 1040 - Hydro test discharge begins to subside. JJM continues to install Sed, traps upstream of EOP in 24" inlet From the east (S3A-ST3). JJM completes installation of sed. traps Wout bottles@53A-5T3. FirstSed trap located =9" upstream of EOP/ second sed trap located =17.5" upstream of EOP@ 53A-ST3. 1100- JJM continues to install two sed, traps w/out bottles in 53A-574 JJM completes installation of sed traps. First sed, trap located = 42" upstream of EOD & the second sed trap was located ~69" upstream of EOP @ 53A-STY JJM noted slight film of iron percipitate on sidewalls of inlet, near pipe invert. Percipitate potentially sampleable if

Scrapped from side - walls

1128- JJM begins to install two sed. traps "/out bottles in 36" inlet from the north (53A-STR)@AAAI79. JJM completes instalkation First Sed. trap located = 49" upstream of EOP & The second sed trap was located Attachments - 72" upstream OF EOP in 53A_ST2. JJM noted large quantities



	Page <u>ک</u> of <u>ح</u>
Project PORTLAND HARBOR STORMWATER SAMP.	Project No. <u>/020.005</u>
Location DFS3A	Date 10/11/07
Subject SEPTIMENT TRAP INSTALLATIONS (07/08)	By JXB/JJM
1128 PDT (53A-STZ) (cont.) - of sampleable st	edimont the entire
extent of S3A-ST2 upstream of EOP. JJM.	captures photos of
see trap installations @ AAA179.	
1359 - Arrive on site @ AAA170. JXB verifi	•
48 "upstream \$ 242" downstream of node.	
of river backup into node AAAITO. No s	sampleable sediment in
pipe during installation of sed. traps. JXB removed safety	
Cails from node ledge JXB installs two sed t	raps Wout bottles.
1509- JXB completes installation of sed. tray	
installed ~ 35" upstream of node in 48"	
trap was installed ~ 45" upstream of 48"	•
JXB captures photos of installation. Pi	pe@ AAAITO is circular
concrete.	
54B12	
10115107	
Note: Only stainless steel sed, t	rap mounting hardware
was installed @ 53A- ST2, SJA-ST	
sample locations. FO installed "Er	
trap bottles on 10/15/07.	
Attachments	

of Page _ Project Portland Hawbor In Line Sed Trap Project No. 1020.005 Location OF53A, rude AAA 171 OF53A_STI Date 10/12/07 By JUB PATA subject In Line Sed Trup Install Arrive at AAATTI, located in cul-de-sace at north deadend 1905 of Rivergate near avegon Steel Mills. Made entry, weasined pipe diameter, Pipis 24" concolor concrete. Sett sediments fine to course sands present in manhole but upstream and downstream sediments are remented sands and gravels Sectionent's are canen measure 2" to 3.75 inches thick. hand enough to make them expremety difficu but are not strong enough to anchor falls in them. Sedimen are also covered what " 1-2" of standing water. is downed up in manhole and up stream of prostol mailue enter ninshole from CBS. After attemption to remove concented sedements using a hamme 0930. called JXB for advice JXB sugarsteel that if seducents could not be removed, Then aboud on site and talk to Lunder about in atento find a suitable alternate. I told JXB first I would triare more time to remove the sediments and then give up if it doesn't work Using a pry par as a chisel and a small stedechammer 0935. out the commented sedsmants in the live approximately 16-18" upstream of the node. Water was removed using a 5-gallon and 1-gallon functicet, water dispose 1 topside in Tandscaping, femoved sediments placed lowing treams node. Sed. trap installed in west side of pipe opprox 14" togsman. Sed trap on east side Attachments

___ of __ Page _ Project Portland Harbor In-Live Sid Trap Project No. 1020.005 Location OF53A, node AHA 171 OF53A-STI Date 10/12/07 By PUBLATA Subject Mhine Sed Trap Install installed approximately 10" downst-upstream of pode. Levelad sed haps and secured them w/ no pottles. Offsite 1133 5 NADE 12hour AA171 upstream 24"Line 14 KNG ふや 100000 downstra JXB 10/15/07 NOTE - Sediment trap stainless steel mounting hardware was only installed Deite OFSBA-STI on 10/12/07. Sed trap battles "FRACLEAN" • 6• were installed on 10/15/07 Attachments

DAILY FIELD REPORT **City of Portland Environmental Services** of Page Project PORTLAND HARBOR STORMWARR Project No. 1020,005 Location OF 53A STORM Date 10/15/07 CYGREM By DJH/JXB SUBJECT SED TRAP-BOTTLE INSTALL BACKGROUND - SED TRAP , HARDWARE INSTALLED AT ALL 5 LOCMANS 10/11-12/07. SINCE ROTTLES NOT DELIVERED UNTIL LATE ID/12/0 INSTACL BOTTLES TODAY WE WILL SPRINKUE WEATHER = LIGHT ST 0F53A BOTTLES (B1+B) - INSTALLOS TWO PDT/B1 motalled in downstream sed trapp B2 installed in upstream ~ 1120 BOTTICS (B1+B) CC 534 - INSTALLED TWO $h \mid H_{0}$ PDT/B1 installed in dwnstream sed trap/B2 installed in upstream STY - INSTALLED. TWO BOTTLES (B1+B) 0F 53A PDT (B1 installed in dwistream sed trap/B2 installed upstream) dwistream sed trap 61150 upstream sed trap OF53A-ST1 - DJH installed two bottles 782 \$ B2 @ 1232 PDT Photos taken by DJH of installation. Flow conditions during time of bottle installation were 25" indepote 0.1 frs. NF53A - STS - Not installed two bottles (B18B2) @ 1306 PDT Adjusted sed trap arms on sile so that sed trap bottle position Was 290° to muest. Photos taken by DJH of installation. Flow Conditions during bottle installation = 1.5" / 2.0 fps JXB an sed trap/ B2 installed in upstream sed trap B1 installed in down? upstream downstream Attachments

DAILY FIELD REPORT City of Portland **Environmental Services** ^v Page of Project No. 1020,005 Project Portland Hayber Stormwater SAMP. Location DF53A& OF19@CALBAG MH Date 12-17-07 SUBJECT MONTHLY SED TRAP INSPECTIONS BV LAP, RCB Arrive on site @ OF53A_ 1140: 9891 N Ramsey Blvd). RCB takes photo of sed- trap in-site upon arrival motes the presence of organice plastic debris accumulated around trap housing. ÷., Wx = overcast. no precip. Photograph upstream bottle (BZ 200 3 ess 0.24 sediment than 1208: Photograph downstream bottle BI Both bottles had approx 0-2" sediment full of stormater. No eder detected. were Arrive on site a 53A_ST2 301 Rounsey & Rivergate). RCB takes STZ in situ photo Photograph upstream bottle (BZ ess than 0.1 " sediment. 131 Sediment. Photograph downstream bottle (B)ろ17 0.1" sediment ess than Attachments

Page of JUR Project PDX Hanbor Stormwath SAMP. Project No. 1020.005 Date 12-17-07 LOCATION OF 53A \$ OF 19 @CAUBAG-MH By LAP Subject MONTHLY SED TRAP INSPECTIONS 1317 (cont.)-2 had a fine laner of sediment on op of trap housing as well as organic plastic debris accumulated. Bottles were full of stormhoter 325 RCB photographs ST3 in-situ. bresence of notes plastic & organic trap Unising debris dround 1326: Photograph ST3_B2 (upstream). Little (<0.05" to no sediment accumulated. Fill of stormwater. Photograph ST3_BI (downstream 329: ittle to ho (20.05") sediment accumulated Bottle only of stormunter. 333 RCB photographs ST4 in-sity. RCB notes provanic debris accumulated around housing. Also upstream of B2 tran upstream bottle) RCB' notes presence of sandy material in pipe inver Photograph ST4-B2 (upstream). RCB 1235: notes brokanic debris (leaf) covering top of B2. RCB vemoves debris cavefully Attachments

DAILY FIELD REPORT

Page <u>3</u> of Project PDX Hanbor Stormwater SAMPTXB Project No. 1020.005 Date 12-17-07 Location OF53A & OF19@ CALBAG MH Subject MONTHLY SED TRAP INSPECTIONS BY LAP 1335 (cont) -STA-BZ (Upstream) has < 0.4" Sediment. 1339: Photograph ST4-BI (downstream less than 0.3" sediment fill of stornwater Weather bottles Both vemains inchanged. _site. 1349 Break down TC and depart Arrive at OF52A 1403 < plastic debris on sed propositions + 1404 Organic debris and Ecovering upspream bottle. horisina Debris (organic) In invest upstream of upstream bottle. Fine present line upstream. sands also presen in REMINE bottle removed before apped bottles RLB Upstream 141 scing capped. Bit transported to ledge, then capped. LAP abserved no debris entering bottle prior to capping foth Downstream both B2 capped, thennemored. 1413 B2 had about 0.25" bottles brought topside for inspection. sedjment and BI had ~ 0.35" of sediment. Both bottles water and both were slightly turbid. No odor. hull OF53K-STT RUB OF53A-STS-32 Pho to'd 1415 B 11 180 11 Bottles placed back in line Attachments

City of Portland

Environmental Services

Page of Project_Portland Harbor Storm Water Project No. 1020-005 Date 12/17/07 Location OF53A sites; OF 19 Callery By LAPIRCB Subject MONTHLY SED TRAP INSPECTIONS 1426: Off-site. Arrive @ OF_19-STI. Overcast, cold, windy, and raining 1450 very lightly. Very small amount of flow trickling in coutor Very Rive layer of silt in pipe. Marganic debris Iwart. i traps. Hes capp 1451 removed 502 Photoid bottle BØ1 (JE 1504 11 11 <u>к</u>., -BOZ u my atrace of sediments present, while Bottle BOLLA BOZ had ~ 0.25" inth. Both Bothes had sightly turbia water and each were full of SW. No odor - Bottles placed backin housing secured, gloves changed 1589 caps removed. OPPSite to WPC 1515 Attachments

DAILY FIELD REPORT



of

Pade

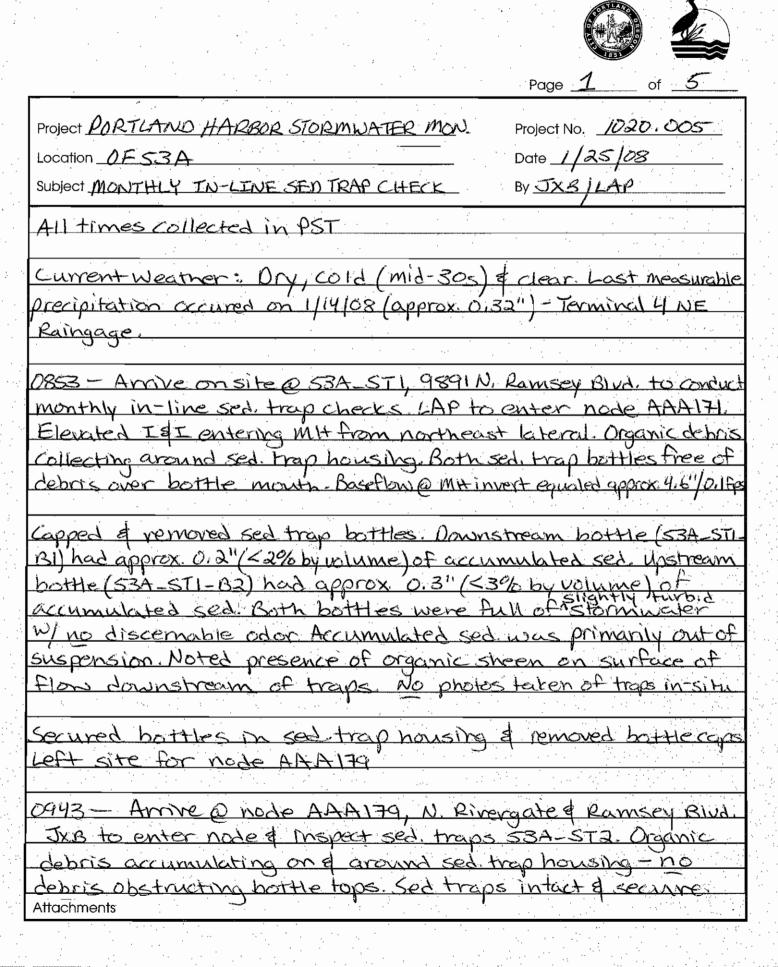
Project <u>PORTLAND HARBOR STORMWATER MON</u> , Project No. <u>1020.005</u> Location <u>OFS3A-ST3 (N. RIVERGATES RAMSEY BLVD)</u> Date <u>1-17-07</u> Subject <u>FLOW RESTRECTOR INSTALLATION</u> By <u>LAP/JXB</u>
0923 PST- Arrive on site @ node AAA179. Set-up TC, assemble equipment & review file.
0931 - Weather conditions: dry, coid & foggy. JXB enters node AAAI79 to install flow restrictor downstream of 53A-ST3 sed trap location (sed traps are located upstream
of 24" flush FOP from the east FOP is Flush w/ the manhole wall. Sed trap bottles are capped to prevent cross contamination during flow restrictor installation. trap
Downstream bottle (53A-ST3-BI) has approx 2" of JXB Stormwater of trace amounts of accumulated sed upstream bottle (53A-ST3-B2) is full of stormunder w/ approx. 0,1"
of accumulated sed. (mostly in suspension). (apped sed trap bottles are re-installed in sed trap housing. Prior to installing flow restrictor, JXB notes base flow
of approx. 1.9". Organic debris/ mats of leaves observed on upstream side of downstream sed trap housing. JXB removes
debris. Base flow now 1.0" - organic debris was causing artificially high flow conditions.
DOULT - Two I when it is a state of the second ball in the

JXB CALLS anchor holt holes & installs flow restrictor across EOP. Flow restrictor is bolted to man hole wall. Downstream sed trap is approx. 9.0" upstream of flow restrictor. Flow restrictor is approx. 1.5" above the invert of the 24" pipe. Restrictor is approx. 10.5" It × 46.5" w. Height of sed traps w/sed trap bottles 15 approx. 9.0" Attachments



____of ____ Page -Project PORTLAND HARBOR STORMWATER MON. Project No. 1020.005 Location OF53A-ST3 (N RIVERGATE & RAMSEY BLVD) Date 1/17/08 Subject FLOW RESTRICTOR INSTALLATION BY JXB/LAP 0948 - Documented installation w/ photos. Stainless sten Flow restrictor was decored prior to installation w/soapy, tap & DI 0952 - JXB rinses off flow restrictor and work area W uppiafter completing installation of flow restrictor. 1013 - Depart S3A-ST3 to return to WPCL after removing sed trap bottle caps. Attachments

DAILY FIELD REPORT



DAILY FIELD REPORT



Page of
Project PORTLAND HARBOR STORMWATER MON. Project No. 1020-005
Location Date Date
Subject MONTHLY TAI-LINE SED TRAP CHECK BY LAP/JXB
53A-ST2 (cont.) JXB
Capped & removed sed trap bottles for inspection. IXB notes trace sediment all
the way up the line, covered by approx.
0.1 " iven precipitate.
Upstream sed trap bottle (OF53A_STZ_BZ)
had < 0.2" of accumulated sediment (< 2"
by volvme). Downstream bottle (OF53A-ST2
-BI) had < 0.1" of accumulated sediment (<17 by volume). NO odors detected No photostaken insitu
- 17 by voierne je protocologie protocologie
Both bottles were ful of slightly turbid
stormwater. Baseflow from manhate invert
was approx. 0.6"; velocity approx. 1 fps
Re-installed sediment troup bottles & removed bottle
caps.
1007 NO + + 0
1007 JXB enters OF53A-ST3 & notes that the flow restrictor is intact &
Tinctioning property - no dobris
accumilation or clogging.
Capped & removed sed frap bottles for
inspection JXB notes approx. 18 Iron
Attachments

Page _ - ź ____ of __ Project No. 1020.005 Project PORTLAND HARPOR STORMWATED MON. Date 1-25-08 Location OF53A By_ LAP/JYB Subject MONTHLY IN-LINE SED TRAP CHECK 53A-ST3 (cont.) JXB Some ivon precipitate dong base of sed trap Mousing along with some organic debris. No debris covering sed trap bottles ad approx. < 0.2" of accomb bal (DF-53A - ST3-B2) sediment (< 27. by volume). Downstream bottle (OF53A-ST3-BI) had trace amounts of accumulated sediment 1217. on volume). pstream bottle (B2) full of slightly WAS turbid stormwater. Domistriam bottle was apprex. 25% full of slightly turbid Sturmwater No photos taken of traps in-situ TXB JXB Baseflow from manhate invert was approx. ; velocity approx. D.I fps. Re-installed sed trap bottles & removed bottle caps 1022: JXB enters OF53A-ST4 & notes some praamic debis & iron precipitate along base of sed trap housing & along sidewalls at bottles. No debris covering sed. trap bottles. JXB notes "slurry" of iron precipitate & sediment extending up the line - apprex 0:25 " at mantate invert w/ greater Attachments JXB

Page of Project No. 1020.005 Project PORTLAND HARBOR STORMWATER MON. Date 1-25-08 Location OFS3A By_ LAP /JXB Subject MONTHLY TN-LINE SED TRAP CHECKS 53A-STY (cont.) JXB accomulation along pipe sides. Capped & removed bottles for inspection. apprex 0.3"- of accumulated sediment herd VEWME) Stellently scrubbed the exterior 01 bottle BZ to remove some iron staining to better evaluate accumulated sediment depth. Rinsed bottle (capped) w/ ultra-pure water to ensure no cross-contamination of Sample by plastic particulate matter. Downstream bottle (OF53A-ST4-BI of accumulated sediment rad approx 0.5 volume) w/ some suspended くらア Sediment. No photos taken in-situ JXB Both bottles were full of slightly turbid stormwater. No eder detected Basefton at manhate invert is approx. 2.3" Velocity 0.5 fps Re-installed sed trap bottles & removed caps. **Attachments**



Page <u>5</u> of <u>5</u> Project PORTLAND HARBOR STORMWATER MON. Project No. 1020,005 Location_OFS3A Date 1 25/08 SUBJECT MONTHLY IN-LINE SED TRAP CHECK BY JXB/LAP 1113 - Arrive on site @ 534-ST5, N. Rivergate & Ramsey Blud LAP to entor node AAA170. Large quantity of organic debris accumulating on sed, trap housing, as well as weittan upstream of trops miline. No debos covering sed trap bottle mouths. Four photos taken of organic debris extent & sed traps in-situ. Organic particle (pine needle) floating on surface of water captured in upstream bottle (534-STS-BI) Approx 0,111 of ivon precipitate "slurny" accumulation all the way up line. Iron percipitate & plastic debris on sedtrap base of housing. Capped of removed bottles from sed. traps Baseflow of approx 2.4"; velocity approx. 1.2 fps Upstream bottle had approx. 0.5" (45% by volume) of accumulated sed. Downstream bottle (53A-575-B2) had approx. D.35"/(3%) by volume) of accumulated sed. Both bottles were full of slightly turbid stormwater W/ no discernable odor Re-installed bottles & removed bottle caps Off site Returned to WPCL [NOTE] Need to talk to DTH & Linda Scheffler about OFSA sanitary inlet into AAAI79-monitoring during sed trop project. Attachments^{*}

of Page _ Project Portland Harbor Stormwater Samp Project No. 1020,005 Date $\frac{2}{25}/08$ Location OF 53 A subject Monthly in-Line Sed Trop Checks By LAP/ATA All times in PST Weather: Cool Partly sunny, rained earlier this morning no rain at check time. 1115 On Site at ST1 - 9891 (OF53A NRamsey : AP debris inspects sed traps: some organic Carl T hansiling Battle necks + shoulders occurrent trap setiment. Water depth = 4.5" at invert debris 4 froa slow relocity ~ 0,1 f/s There is Some Vera I into node from a later comina T LAP Notes some in invect within Vault. fine sands 5 d 0.5 Sod trop= Rottles capped and removed from housing. U/s bottle (BZ approx 0.3" (23% by vol) of accumulated sedime MAS . settling of sediment on inside some of low with wall Battle battle (Down Stream between of accumulated Sedment \$2.03 less 0.2 -0.3 (Approx 2-3% br valume) report (A) than Both bottles are Completly full and Water, and there noticeable odor or sheen present. NO Bottles replaced into housings Caps removed No Photos taken. Attachments

Page of Project Kortland Harbor Hormwater Project No. (020.005 Date 2/25/08 Location OF 53 A subject Monthly In-Line Sed Trop Cleck By LAP/AJA Arrive onsite to 1115 513570 ONO 53A-5T2 onts carafut organ Mansilia Jone ch Lould Battle Ex. s No housings at ilvou 10 مدنه 14 ~ ppo × Dolow precipitate visib Tron as alway Sediment in pipe 102 about 0.1-0.2" R1 Seconcent has 1210 by yola 0.3" of sed in battle) about 5 К has U 64 3% volume 40 R.H trap bottles were full tairl Sed por Sheen Water without or odor. 1242 53A-572 Flow restrictor working well Seens to 60 doing Some Organic Labris on housings Bottles <u>Job.</u> these of debris Water is 2,5" deep at haisings in the 1.5 F/s velocity. Iron Precip. everywhere no sedment presents (ont. Attachments

DAILY FIELD REPORT

Page 3 of 57.13 Project No. 1020.005 PDX Harbor Stormwatth Samp Project Date 2-25-08 OF53A Location Monthly Sed Trap Check By_ AJA, LAP Subject ___ ST3 cont u/s has ~ 0.1-0 2 of see getting ding difficult to iron disculoration to see by vol. 11pan 1-2% bottle Opening Gottle the menoradase Hest tha odiment is Simell ofthe the _____ ho Horn only ~012 tal Stor à Es 04 nes 10 about Sed as O.1 accomulated the outside " of 6 tom of 6ittle the around 1º10 billolume Bottle is full of odorless CUpar Stormanter and read Altes returned to honsing up capped 10 taken, w/out sed trap bottles in-siturestrictor Photos Flom 255 0F53 A 5T4 53A-ST4-B1 atte Least over its opening Downstream has removed with care taken 208 Photo and one introduce any sediment bottle to not 2-2bottles are free of debris. Normal organs Otherwise debris present on Sed tra l'housings Attachments

f of Page -JXB Project PDX Harbor Stormwater Samp. Project No. 020.005 Date 2-25-08 OF53A Location subject Monthly Sed Trap Check By AJA, LAP Cont.) Bottles Capped and remained from housing for inspections. (u/s) has about 0.5" of sedment although its difficult to get an accurate measurement because battle is getting very dirty and is have There 15 to see Amongh. Ga Smal Diece Gamic debris floating there is some flake unat hotte cont Surface perhants from bacteria slight odor H2S. maila < Lere ie also hard 40 mensure but there is least 05" sedment. There is algae a ast Suail Constacions Some very Sina this sample. (daptings) daphnae" - AFT bacteria no strong Dron dor. to sense only odar. Upon seema the aquatic life recommended Algae not present our rue. Difficult to see through not present, but one crustacion observed. bacteria Coust iron Bottles replaced in honsing un capped and ready deep ~1.5 fls at housings in invert 2" Attachments

of . Page Project PDX Harbor Stormwater Samp. Project No. _1020.005 Date 2-25-08 Location 0F53A_STS: N Rivergate & Ramsey By AJA, LAP subject Routine Sed Trap Inspections 452 Atrive @ OF53A_ST5 (node AAA 170) Intrant notes presence of organic debris surrounding both up - and downstream sed trap housings. OF53A_ST5_BI, the upstream bottle, had a leaf covering 50% of the bottle had uppy arrival. A plastic "potato openina found wrapped Was ip bag sed trap housing, causing somewhat ramping effect. Two photos taken. leaf was carefully removed ensure that no debris entered the bottle & then capped. BI is full of slightly tirbid stormmater and approx one inchilio of sediment. No odor defected OF53A_ST5_B2, the downstream bottle, is full of slightly turbid stormwater and has approx 0.35" No odor detected. of set (3) sediment Bottles returned to designated locations. secured & un-capped. Attachments



____ of _ Page ____ Project OF 534 2007/2008 KILLIKE SED TRAPER NO. 1020.005-Location PORTLANN HARBOR STORMWATER SAMP. Date 3/27/0503 Subject MARCH SED TRAP CHECKS By WCR/ECH 53A_572,3,4: ARA. 0830 - SET -UP TRAFFIC COUTROL 53A_ST1: ARR.0959 -5M_ 575: ARR. 1029 1053 - DEPART -• * ਤਰੀ ਦਾ ਦ Attachments

of Page Project No. _10 20.005 Project FORTLAND HARBOR STORMWATER MON Location BASIN 53A Date 4- 30-08 BY LAP, ECH subject Routine battle checks 53A_STI (9891 N Ramsey Blvd). Both bottle's fill of fairly clean strinwater it no apparent odor. VO-& downstream bottles had similar amounts of accumulated Sectionents 3/27-108 JX 4-16-08 check tion last Mater elevation (a) EOP invert approx. 3.0 Routine check. Organic debris & plastic caugh on sed trap housing - NOT covering bottle opening. 0930 : 33A_STZ'/N Rivergate Painsen Proth bottles fill NORTH tailin of no apparent dear stormwates in odor. p-& downstream bottles had similar mounts of accumulated sediments check (3-27-08). vom last ome praamic debris caratet around ced trad housings not covering botthe openings. Baseflew approx. Provine check invert- $\left(\right)$ 0955: 53A-ST3 (Unlet from East, flow vestrictor Entrant notes organic clebris around sediment trap horsings - flow restrictor free of debris. Both bottles almost fill airly clean stormwater. I no odor. Both Attachments apparent bittles



Page ____ ___ of _2 Project No. 1020.005 Project Portland Harbor Stormwater Mon. Date 4-30-08 Location BASIN 53A By HELECH subject Routine bottle checks JXR Slightly more accumulated sediment from last check (3-27-08). Basellow @ 1.3" Routine check. invert is approx-005: 534 ST4 Inlet from south). Entrant sheen from south inlet. Both Instes d trap pousings have province debis around them - not covening the opening Both bothes ily clean stormwater ut annand no Both m-& downstream have approx than More accumulated rediment ast check (3-27-08). Prasetlow approx. Koutine invert a pipe. ort Kivergate & Ramsen Blvd IN_ 1028 S 5 Entrant notes organic debris canglit sed trap horsings. Also, organic orna etris found covering bottle BI Upstream photo Pepris carefully covered. enina rumente nothing fell inte ensive bottles fill on Doth F fairly clean stormwater ut no apparent 00 VOStream had Sheen. tream bottles had accomplated more Sediment Since Last Check (3-27 -08 How approx 1.2" Routine cheek. Attachments Depart to WPCL. 1051

Page of Project No. _1020.005 Project PORTLAUD HARDER STORMUMTER SAMP Location OK 53A STI-JSTS Date STG. BY URR ISXB Subject BOTTLE & TRAP REMOVALS 0814 OUSITE AT ISJA STSTOREMORE SAMPLE PSJ. TSOTTLES ' SED TRAPS DUR TOPPETSIUG RIVER LEVELS. WE DOLI'T WAUT TO COMPROMISE SAMPLE COLLECTED HERF TO BE COMPANYING BV RIVER WATER COMING UP THE OUT PALC. WEDTHER IS CLOUDY COOL, CMRY, LICI PRECI AT LEAST THE PAST 2 OB35 JXB FLITTERS TO REMOLE BOTTLES UBST UPSTACAM TRAPS HAVE ORGANIC DEBRIS ON THEM. DU NOT OU BOTTLE TOPS. BOTTLES ARE FULL OF STAM WIRTER. CAP BOTTLES, TAKE FHOTO OF BOTTLES ILLSITU. BOTTLE 2 IS THE MUNISTIZEAM BOTTLE, BAILLE NOTLES TOPSIDE BOTTLES LABELLED, NOUMELTED, PHOTOGRAPHED. # Archived for subsequent processing JXB 5/14/08 SMALL AMOUNT OF SERVICENT URSTREAM KNOM SED TRAP LOCA-TIOLI: JLILIA SETTILL UP C MH AAA 179. A_ST41 - BOTTLES KREE OF DEDNIS, BUT UPSTRE OF BOTH TRAPS HAVE ORGALIC DEBRIS AROUND THEM, CAPPED BOTTLES. HELLO SEDS UPSTREAM OF TRAN JUST FE BACIERIA. BUTA BOTTLES KULL OF STORMWATER, SOME ODOR AT LEAST OF DECAVIAL ORGALIC MATTER Attachments



of Z 2 Page ___ いるいだいしょう Project No. 1020 005 Project PORTLAND IHANXA STONMWATER SAMP Location OKS3ASTI->STS Date 5/7/08 Subject 130176 5' TRAP REMOVALS BY WAISXB what was KIQ BUTTLES RENORD, DOCUMELITED, Photographed & archived JXB 5/14/08 OKSM x v RESTRICTOR JXK 1028 PSI ST ENTER REMOVE FLOW CONSTRICTOR WARD SPPCS 17E WAS FARE OF ORGANIC DE BAIS ORG. DEBRIS OU UPSTREAM SIDE OF SED TRADS BUT HOT ROTHES, CAPARD BOTTLES. THE ADHERED TO FUNCE FIRE WHERE NO KOA 2HL LOW COUN 104 WAS RELISTALLED 11PSTREAM ILL THE Ŕ AND BOTTLE 2 WAS PUT 14 MOULISTREAM TRAP. SLUDLE UPSTREAM OF TRAPS, BASE FLOW re PRT VELOCITY IS NOSEPS, BUTTLES REMARD, Documented Photographed archived JXB 100RE-ELITER 57 REMAR LASS 70 HALF ORG. DEMIS WITH SET. TTAPS SELT PSTAGEN SIDE OF HOUSNIG BOTTLES FARE OF DETRIS AT TRA ASCHLOW . NORKES WO SALARE AR PPOT. 105SIBLY WI SKAI MATOR Sed. Trap bottles remained postaling appression CALINOT GO TRAT FIR UP STR ean House & archived JXB 5/14/08 SETTILL VP TO KATHIR Sen TRAP HOBILI REDAUS, BUT HASA LOUL PIECE OF MASS BOTTLES ANE FREE OF DEBRIS OU IT. N4" ON STANDILIC WATER WI FE BACTERIA ON SCARAGE 1240 PST-Sed. Trap bothes removed, documented, photographed CAPS REMULE BOTTLES SEDS UP STREAM KILISH OH-SIJE WORK, DEPART FOR WPGL Attachments

1.2 CITY OF PORTLAND ENVIRONMENTAL SERVICES Field Operations 6543 N. Burlington Ave. Portland, OR 97203-5452 INENESED MENERAPHED DATAS: EET Project Name: PORTLAND HARBOR STORMWATER SAMP Project No.: 1020.005 Date: N Ransey Blud Basin Site Address: 9891 Pt Code: 53A.ST SECTION 1-INSTALLATION INFORMATION Describe flow conditions and depth and/or any standing Traffic control and/or site access concerns: water at time of install (does river appear to back up into this Mininal traffic control, potential line intermittently?): Standing pool of water, approx. 1" deep. For large trucks turning near Created by Semented sediments downs tream Work area. \$11 upstream of MH there is a Describe sediments in pipe if present (depth, sampleable quantities, lateral extent, etc.) Apprix, 2" of soft sediment upstream, really samely. 4'lon, inite section of come Sediment trap location(s) (pipe size, distance from node, proximity to laterals, etc.): Z [11] , V = East side approx. 14" upstream of worke, fraps placed an side Pipe diameter " (inches): 24 Distance from MH side approx. 10" upstreamed ned of pipe due to whs node (feet): SED TRAP SITE DIA GROM (Sketch map of the lateral(s) and layout of manhole, showing approx sed. trap location, manhole elevation and inline sediment if present **Orient drawing** using the top of the page as north): Traps BOTTLES 24" 53A_ST1 10/15/07 CBla Deepth of my Baterat

Davastran Bottle = 53A_STI_BI Upstream Bottle = 53A-STAB2 STI-B2 Pt. Code: Hansen ID: SECTION 2 MONTHLY EIELDICHECKINEORMATION SJA-ST AAA17) Archived ID: Estimated sed. depth per bottle (% & Bottles removed and replaced? X/N Date: inches) EPA Clean Sed trap bottles installed on 10-15-07 JXB Bottle 1-20.01" Bottle 2-10.02" If removed which one? 11-28-07 Bottle 2-10.021 By: Bottle (20,1%) Bottle (20,1%) JXB/MJ Holding Comments: Sed trap bottles had trace amounts of sed collected, Both Sticker sed, trap bottles, were full of SW. SW was slightly turbid, clear in color w/ no discernable odon. Organics & plastics hung up on sed, traps. Estimated sed, depth per bottle (% & Bottles removed and replaced? Y/N Archived ID: Date: If removed which one? inches): 12.17.07 Bottle 2 - < 0,2" Bottle | _ < 0,2 " Bv: Bottle_<2 Bottle-<2. RUB, LAP Trace amounts of sediment in both bothes. Bothes Comments: 11 of stormwater (slightly turbid). Organic \$ plastic housing Estimated sed. depth per bottle (% & Bottles removed and replaced? Archived ID: Date: Y/N , If removed which one? inches): ~0,2" 1125104 By: JXB/LAP Bottle - <2.00 Bottle 2- ~0.3" Sed trap bottles were completed TXB/LAP Bottle - <2.00 Bottle - <3% Fail of slightly furbid storm water Accumulated sed primary out of suspension. Comments: (23% by volume) of accumulated sed, is petraam sed trap bottle (53 A-STI-B2) had approx. 0.3" (<3% by volume) of accumulated sed. Estimated sed, depth per bottle (% & Date: Bottles removed and replaced? Y/N) Archived ID: 2/25 inches): If removed which one? 108 Bottle -1 4/s 0.2-0.3 Bottle -2 4/s 0.3" Bottle - 2-3% by V. Bottle - 23% LAP/AJA Battles full of fairly clear water. discernable Comments: Curve at bottom of bottle. Some sec settling on odor or sheen. Date: Estimated sed. depth per bottle (% & Bottles removed and replaced? Y/N Archived ID: inches): If removed which one? 160 Bottlel - (D/S)0,2-03 Bottle 2 - (U/S) 0,2-0, 4" R۱ Bottle - OF SEAMEN A Bottle - SETTLED Comments: SMALL AMUVUT OF LEARY DEBRIS ON TROP BUT NOTON TOPSOF DOTTLES N4. 611 OF BASE FLOW SEAMENT OF SERS ON INTERIOR DALL, SAME W/BOTTLE Z BOTLES FULL OF WATER'S BOTTLE, VERY TRACE AMOUNT OF SERS ON INTERIOR DALL, SAME W/BOTTLE Z Archived ID: Estimated sed, depth per bottle (% & Bottles removed and replaced? Y/N Date: inches): If removed which one? 4-30-09 Bottle 2 - 0.3"-01" Bottle (- 0.2 - 0.3" By: Bottle - <3% ELH, LAT Bottle -221. of stormwater (fairly clean bottles hBoth Comments: 0 apporent odor. Bottles (emoved and replaced? (Y/N Estimated sed. depth per bottle (% & Date; Archived ID; If removed which one? inches): 5/6/08 13074 Bottle / - NO12" Bottle 2-20-0.35 Bv: 53AST, WURIDAD Bottle Bottle BITBZ REMOVAL OF BOTTLES & TRAPS PER CLOSED REQUEST 1240 comments: 5/6/08 End of Seploymout period TVB 5/11/08

Date: Estimated sed. depth per bottle (% & inches): Bottles removed and reif removed which one? By: Bottle - Bottle - Bottle - Bottle - Bottle - Bottle - Bottles removed and reif removed which one? Comments: Date: Estimated sed. depth per bottle (% & inches): Bottles removed and reif removed which one? By: Bottle - Bottle - Bottle - By: Bottle - Bottle - Bottle - Comments: Date: Estimated sed. depth per bottle (% & inches): Bottles removed and reif removed which one? Date: Estimated sed. depth per bottle (% & inches): Bottles removed and reif removed which one? By: Bottle - Bottle - Bottles removed and reif removed which one? Date: Estimated sed. depth per bottle (% & inches): Bottles removed and reif removed which one? By: Bottle - Bottle - Bottle - By: Bottle - Bottle -	eplaced? Y/N Archived ID
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Bottie - Bottle -	
Comments:	
Date: Estimated sed. depth per bottle (% & Bottles removed and re inches). If removed which one?	eplaced? Y/N Archived ID:
By: Bottle - Bottle - Bottle - Bottle -	Additional and a constrained from the second s
Comments:	
Pt. Code: SBA_ST1 SBA_ST1	E Hansen ID: AAA171
Sample ID: FO 080764 Duplicate sample collected at Dupe ID: this site? Y	NA
	from standard procedures? YN
Somments: Composite sample was primarily five silts & San Content. Composite sample had a slight organic sme Sheen. Composite was brownish gray	10 rall rain - por auto

Control Performance C				·
Project Name: PORTLAND HARBOR STORMWATER SAMP Project No.: 1020.005 Bale::::::::::::::::::::::::::::::::::::	ENVIRONMI 6543	ENTAL SERVIC ield Operations N. Burlington Ave.,	ES	
Site Address: N. RTUERGATE # RAMSE? BLUD Production Basin: Tailor Hansen ID: Traffic control and/or site access concerns: (See 354) SECTION 1 - INSTALLATION INFORMATION SECTION 1 - INSTALLATION INFORMATION Traffic control and/or site access concerns: (See 354) Describe flow conditions and depth and/or any standing water at time of install (does river appear to back up into this in the correct and install (does river appear to back up into this in the correct acting access in a finite access concerns: (See 354) Note: The flow conditions and depth and/or any standing water at time of install (does river appear to back up into this in the correct acting installed the correct acting in	. INLINE SEDIMENT	TRAP FIELD DATA	SHEET	
Site Address: W. RUERDATE & RAMSEY BLUD Prode: DF 53A_ST2 DF 53A DF 53A AATTA DF 53A DF 54A				
Stature in the intermittent of the intermediate of the intermittent of the intermitten	Site Address: N. RIVERGATE & RAMSEY BLU	Pt Code:	Basin: 101/51	Hansen ID:
Traffic control and/or sile access concerns: (See 35A) "Heury storm events can cause elevated flow water at time of install (does river appear to back up into this in node (large storming blow) making its decess d if flout to gite Flow test flow conditions and depth and/or any standing water at time of install (does river appear to back up into this line. How conditions during new later into the intermittentivy): How conditions during installuation restrict garcalleling hoot present (dopth, sampleable quantities, lateral extent, etc.): Sample test flow conditions during new later sample test flow conditions during new later is sample test flow conditions during new later sample test flow laterals extends entre length of time / intert. Sediment trap located 2 19 " f 7a" upper can of 36" EOP intert from the north. Sed traps installed 219 " f 7a" upper flow of 36" EOP intert from the north. Descare of node notice of node install during using the to of the laterals and layou of manhole, showing approxied test best of sales of installed 12.5' deer that and interesent of sale. 13.5' deer that NH ELEN NH ELEN NH ELEN NH ELEN 13.5' deer that NH ELEN 13.5' deer that 13.5' deer tha				
 Heavy storm events can cause eigeneted flas water at time of install (does river appear to back up into this ine intermittentity?): Hitten teg site Elevanta Plan conditions during NW Netward Hydre test downstream of Net. Moderose To W large somi-trucks & host trucking access for the provide the test downstream of Net. Moderose To W large somi-trucks & host trucking access for the provide the test downstream of Net. Sampleable guantities, lateral extent, etc.): Some of 30.11 fuelesting to the test downstream of Net. Sampleable guantities, and the test downstream of 36.11 fuelesting to the test downstream of the test downstream test downstream of the test downstream of the test downstream of the test downstream of the test downstream of the test downstream of the test downstream of the test downstream test downstream of the test downstream of the test downstream of the test downstream of the test downstream of the test downstream of the test downstream of the test downstream of the test downstre	Martine del Automation de la construction de la			
Han	 Heavy storm events can cause elevated 0 node (large drainage basin) making accord ifficult@ site Elevated flow conditions during NW Actural hydro test, downstream of inlet. Moderate TC W large semi-trucks & factor of the store that the second during work zone. Describe sediments in pipet present (depth, sampleable Sampleable quantities of sediments extends Sampleable sediments primarily consists Sediment trap location(s) (pipe size, distance from center Sed Traps are located 2 10' upstream f Id traps installed 249" & 72" upstream Sketch map of the lateral(s) and layout of manhole, showing approx se using the top of the page as north): OF 53A-STR EOP ID SED TRAP SITE DIAGRAM ID AFSTA-STR ID AFSTA-STR ID AFSTA-STR 	Flow water at time of instal line intermittently?): • River does n this iine. • Flow condition (consisted of abase quantities, lateral extent, etc. • Flow condition (consisted of abase quantities, lateral extent, etc. • Flow condition (consisted of abase of sentire length of sentire le	I (does river appear to be of appear to be rs during install flow of 20,1" fu c.): Dictistic = 1. 36" EOP from t line/inlet. S w/ iron percip s, etc.): Pipe e AAA179 (incl from the north Dist. node and inline sediment if present. installed of 36" m the north 12"	ack up into this ack up into tation elacity of 27 fp 16 4 1.5 fps he north. Itate. diameter les): 36" ance from MH 2 (feet): 70" Orient drawing
	42"	1	Zidisli	

Downstream bottle = 53A - 5T2 - BIUpgream bottle = 53A - 5TA - B2

PL Code	SECTION 2 - MONTHLY	FIELD CHECK INFORMATION	Hansen ID; AAA174
Date:	Estimated sed. depth per bottle (% & inches): EA "Clean" sed. trap bottles installed on 10/15707 JXB	Bottles removed and replaced? VN If removed which one?	Archived ID.
By: JXB/MJS	Bottle 1- Bottle 2-40-0-5 Jx3 Bottle Rollo	Sw was slightly turbid, clear in color w/no odor.	Holding
Comments: Up able amount of sw coile upstream	etream sed. trap bottle (B2) function of sed (20,10%). Downstream sed at (20,10%). Downstream sed at (20,10%) for sed of the sed of	(1) of SW w/trace to no measur- ed. trap bottle(Bi) had 0,75" Suchume may be attributed to	Sticker
12.17.07	inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID.
BY: RUB, LAPP	Bottle 1 - < 0.1 "Bottle 2 - < 0.1" Bottle Bottle		
	Fine layer of sed accumulas plastic debris wrapped anon		
Date: 1.25-08	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? YN	Archived ID:
BY: JXB, LAP		by volume) N/H	
Comments:	Both bottles fill of stor the way up line covered	mwater. Trace sediment by iron precipitate	t
Date; 2 25 05	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/D If removed which one?	Archived ID:
By: intp/ASA	Bottle $-1(4s) =$ Bottle $2(4s)03^{41}$ Bottle $-0.1-0.2^{41} - 22^{4}$ Bottle -3^{49}		£ 4
	Both bothles full of west		
No sed Date:	in pipe invert, Iron pre Estimated sed. depth per bottle (% &	Bottles removed and replaced? YN	Archived ID:
3/27/08	inches):	If removed which one?	AUCHIVED ID.
By: WER/ECH	Bottle (D/s) Bottle $-0.3 - 0.4$ sate	0	
Comments: (). I ⁻ 2000, BOT	REALIC LEAF DEBRIS OU TRAPS, C. HE RUCE OR STONA WATER; BOTH STIL	BUT NICT OH BOTTLES O.6" BASE	
Date: 4.30.08 By:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID
BY: LAP, ELH	Bottle / - 0.3'' Bottle 2. 0.3-0.4'' Bottle - < 3 / Bottle - < 3 / -		
Comments:		rly clean Stormwater.	
Date;	Estimated sed. depth per bottle (% &	Bottles (removed) and replaced? (V/N	Archived ID
5/6/08	inches):	If removed which one? Bo TH	MICHINGU IDA
By: WCR/	Bottle / 2013" Bottle 2- 0.4" Bottle - Bottle -		53A-512- 514 B2 110013
Comments: Re WATER, M	GNOVAC PERCUSTOMBR REQUES S DAPARGLIT ODOR	of deployment pervod 5/14/08	514 10000
		- cynymun period 5/14/08	

S.,

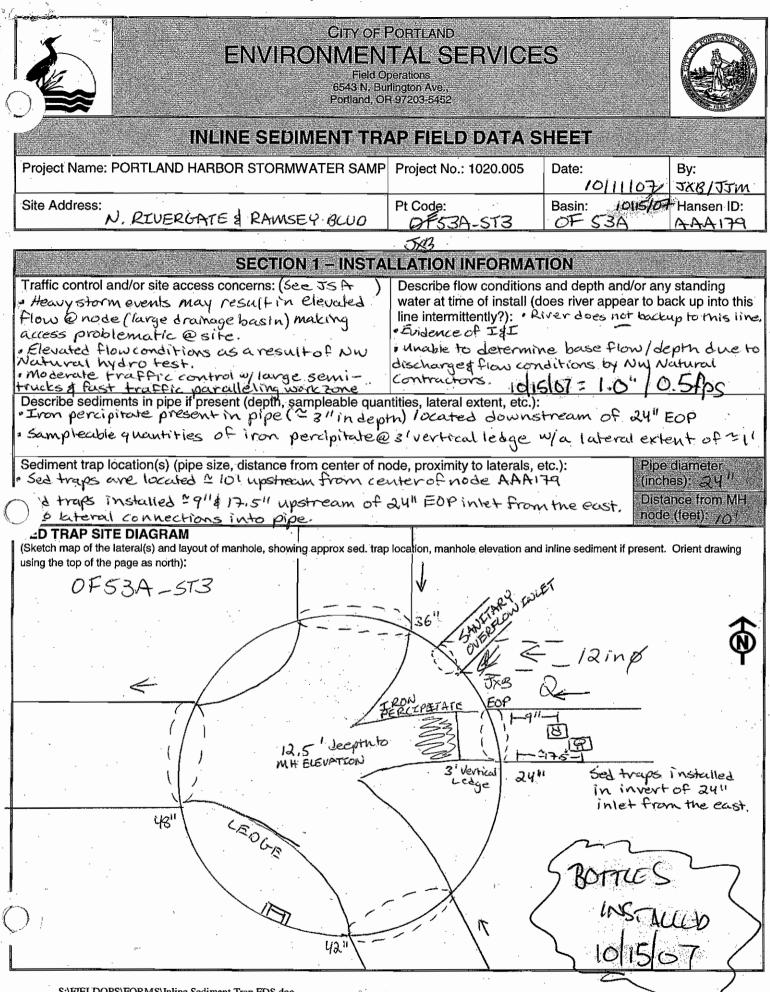
Date:	Estimated sed. depth per inches):	bottle (% &		oved and replace which one?	ed? Y/N	Archived ID:
By:		iottie - iottie -		/		
Comments:						
Date:	Estimated sed. depth per inches):	bottle (% &	Bottles rem	oved and replace	ed? Y/N	Archived ID:
By:		ottle - ottle -				
comments:						
Date:	Estimated sed. depth per inches):	bottle (% &		oved and replace which one?	ed? Y/N	Archived ID:
Ву:		ottle - ottle -				
comments:					,	
Date:	Estimated sed. depth per inches):	bottle (% &		oved and replace which one?	ed? Y/N	Archived ID.
Ву:		ottle - ottle -				
comments:	/					
Date:	Estimated sed, depth per inches):	bottle (% &		oved and replace which one?	ed? Y/N	Archived ID:
By:		ottle - ottle -				
comments:						
Date:	Estimated sed. depth per inches):	bottle (% &		oved and replace which one?	ed? Y/N	Archived ID:
By:		ottle - ottle -				AULTRANSFERREICHTHEASTAN
comments:	U			· · · · · · · · · · · · · · · · · · ·		and and a second second second second second second second second second second second second second second se
Pt. Code:		SECTION 3-	COMPOSI			Hansen ID:
53A-672		SECTION 3		COANTLE		AAA179
Sample ID:	FO 080765	Duplicate sample this site? Y/N?	e collected at	Dupe ID:	N/4	•
	ple identification # on COC			deviations from		
	and the second s	2				
	composite consister redium to coarse	sands comp	ny consiste	dof fre si dave brown	Its of sand	to withe

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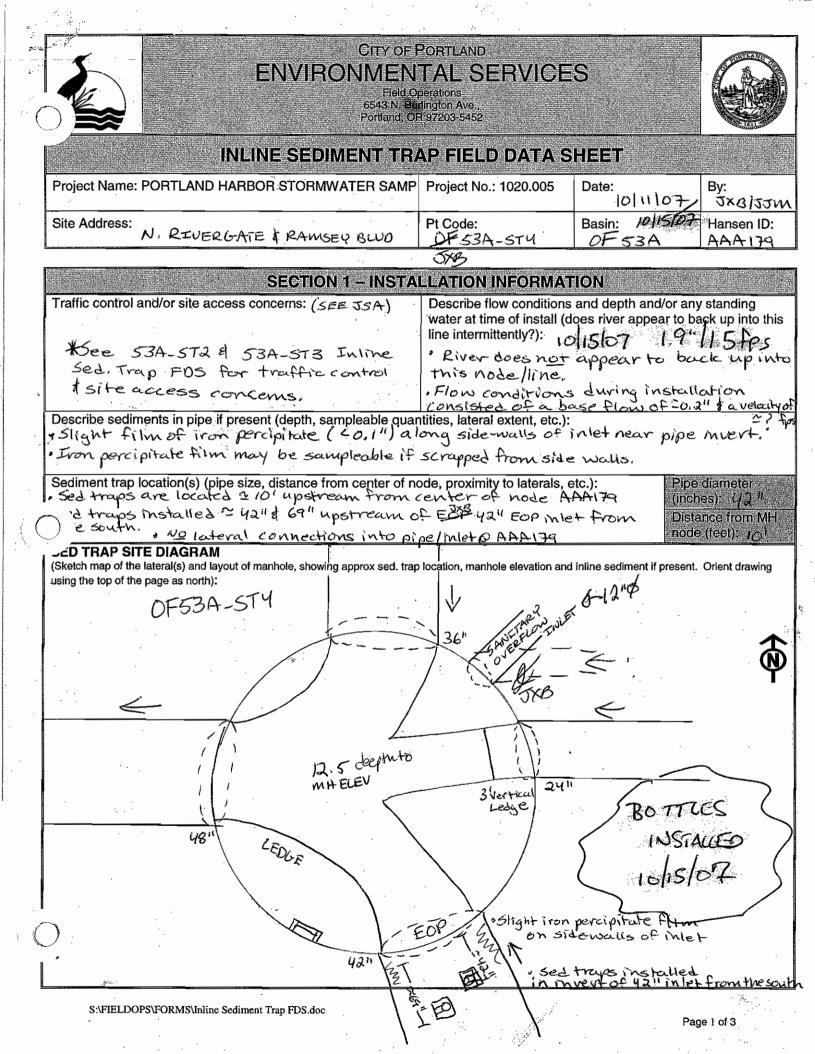
Page 1 of 3

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Downstream bottle = OF53A_ST3_B1 Upstream bottle = OF53A_ST3_B2

Pt. Code: 53A-513	SECTION 2 - MONTHLY	FIELD CHECK INFORMATION	Hansen ID: AAA179
-Date: 11-28-07	Estimated sed. depth per bottle (% & inches) EPA clean Sed trap bottles	Bottles removed and replaced? YA	Archived ID:
By:	inches) EPA clean Sed trap bottles Installed 10/15/07 JXB Bottle 1- Bottle 2- Bottle - P	N/A	Holding
Comments: BC	th sed. trap bottles were comp ed traps caused large quantities maps. Organic debris domming lin	of leaves to collect upstreams	
Date:	Estimated sed. depth per bottle (% &	Bottles removed and replaced? Y/N	4 Post (22,6"/ Archived ID:
12.17.07	inches):	If removed which one?	
BY: RUB, LAP	Bottle - <0.05 Bottle - <0.05 Bottle	N/A	
Comments: 2	Both bottles had little to n (Upstremm) fill of stormwate 1/4 full of SW. Organic &	o sediment (<0.05") Bottle er, while B1 (down) only plastic debris around housing	
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N	Archived ID:
1-25-08 By: JXB, MP	Bottle - $(< 0.05")$ Bottle - $(\angle 2^{10})$	NA	
Comments:	Vestream bottle full of	سيديد أشاهلا لالمحال	
Date: 225 08	Estimated sed. depth per bottle (% &	Bottles removed and replaced? YW	Archived ID:
By: LAR/AJA	Bottle 1 - ~0.1", ∠1% Bottle 2-0.1-0.2" Bottle - Bottle - 1-2%		
Comments: FI	of the bottom of bottle	1. Sediment only around the . Stormwater clear and adoptess	
Date: 3/27/08	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? YN	Archived ID:
By: WCR/ECH	Bottle 1 - (0/s) 0.1-Bottle2-(U/s) NO.1"		
- 0	RCALIC DEDATS ON TRAPS BOT A 2010, BOTTLEL SEDIMENT FARLY SE PBOTTLE, BOTTLE 2' STERS FAILURS KITLE	NOT OU BOITLE TOPS, N.4" OF BASE MED, TRACE AMOUNT OF SEAS A TANKED TO 5, THE E ANALOTS OF SEAS ATTACHED TO	
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N	Archived ID:
4-30-08 By:	Bottle /- "0.2." Bottle Z- 0.3"		
EUH, UP	Both bottles fill of fa	irty clear stormwater	
M	no apparent oder.	are for a for the for	
Date:	Estimated sed. depth per bottle (% & inches):	Bottles (emoved and replaced? (VIN) If removed which one? BOTTA	Archived ID:
By: WCAY JXIS	Bottle $1 - \mathcal{NO}_{12}$ Bottle $2 - \mathcal{NO}_{12} - \mathcal{O}_{13}$ Bottle - Bottle -	· · · · · · · · · · · · · · · · · · ·	CA C
Comments: U	ROW REMOVIAL, BOTTLET WAS 14	UPSTREAM TRAP BOTTLE 2 month's sed trap check JXB 5/14/08	-BI 252 1036 RST
WAS 14 DO	WILLSTREAM TRAP: REMOVAL UPOL	4 CUSTOMER REQUEST	516 05
S:\FIELDO	PS\FORMS\Sediment Trap FDS.doc End o	f deployment period TKB	ge 2 of 3

Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle - Bottle -		<u>en andre en a</u>
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:		/	
Date:	Estimated sed. depth per bottle (% & /	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle -		
Comments:			
Date:	Estimated sed depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Pt. Code:	SECTION 3 -	- COMPOSITE SAMPLE	Hansen 1D
53A-513	E0 000766		AAAITA
Sample ID:	FO 080766 Duplicate samp this site? VN	Dupe ID:	
Duplicate sam	nple identification # on COC:	Any deviations from standard proce	edures? Y
omments: 2	Composite primarity consist incorown in color. No visio	ed of fire silts of sands of a le sheen or odor observed.	Nas



Dovonstream bottle = 53A-5TY-BI Upstream bottle = 53A-5TY_B2

PI Code 53A_STY	SECTION 2 - MONTHLY	FIELD CHECK INFORMATION	Hansen ID ANA 179
Date: 1112-8107	Estimated sed. depth per bottle (% & inches): EPA clean Sed trap bottles	Bottles removed and replaced? Y	Archived ID:
By: JXB/MJS -	Bottle 1-00,03 17 Bottle 2-0.02 11 Bottle (20,1%) Bottle (20,1%)	sw was slightly turbid w/ no odor delear in color.	Holding
of sed. co	oth sed, trap bottles were fun lected. Upstream bottle (B2) had nbottle (B1) had 20.03" of acc	20.02" of accumulated sed,	Sticker
Date: 12.17.07	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N	Archived ID:
BY: RUG, LAP	Bottle I - < 0.3 Bottle Z < 0.4 Bottle -		THE CONTRACTOR OF
Comments:	Study material noted just bottle) Overanic debris accum af covering B2 upon arrive	Nlated around trap housing	
Date: 1.25-08	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? YN	Archived ID:
By: JXB, MAP	Bottle 1 - 0.5" Bottle 2 - 0.3"- Bottle - Bottle -	· · ·	
Comments:	dewalls of bottles. Sturry of	nivater. Some organic base of sed. trap & along iron precipitate & sed. extend	s up the livie
Date: 22508	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y(N)	Archived ID
By: LAR AJA	Bottle 1 - 0.5" 5% Bottle 2 - 0.5 5% Bottle - Bottle -		-
dight ode	natic life observed in 82 (algae r from bacteria + crustacean L) (mulbelt25) & flakey mak	beeved in B2 Organic debris closerved in B2 Organic debris cricel (iron bacterial floating on surfac	e of starmucher
Date: 3/27/08	Estimated sed. depth per bottle (% & inches):	Bottlès removed and replaced? Y/N Captures	Archived ID;
By: WCR/ECH	Bottle / - (DS) 0:4 - Bottle 2- (V/S) 0:4- Bottle - 0:5* Sen New Bottle - 0.6* Sen New		
Comments: Lt	BORNE DU TRAPS, BUT NOT ON DOITH TER. 1.3" OF BASE KLOW - BUTTLE 1:44 HEADE WALL. BOITLE Z: LICT COMPLETERY	E TOPS, BATH BATUES FULCORS JOING AT COMPLETERY SRATLED, TRACE AMOUNTS SETTLED, TRASE AMOUNTS OUT WALL	
Date: 4-30-08	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y(N) If removed which one?	Archived ID:
By: ECH,LAP	Bottle $(-30.5")$ Bottle $2-30.5"$ Bottle $-<57$ Bottle $-<57$.	, , , , , , , , , , , , , , , , , , ,	
Comments:	Both bottles fill of fai No apparent odor.	rly clean Stormwater	
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? (Y/N If removed which one? BOTA	Archived ID:
By: UCM	Bottle] - 0,5" Bottle 2 0,4" 0,5 Bottle - Bottle -	5×6	538-57 -13190-21 1010,055-
Comments: R	EMOUAL OF BUTLES & TRAPS, DECAYING ORC. MATRER, AT LEAST F	130711 BOTTLES 12006 OLSTORMARAD	576108
SOME ORD;	DECAYING ORC. MATRER, AT LEAST F	End of devloyment period 5/14/08	``

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· .			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID
By:	Bottie - Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
Ву:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
) Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived (D.
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches)	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
Ву:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Pt Code:			Hopeon ID.
53A-574	SECTION 3	- COMPOSITE SAMPLE	Hansen ID. AAA1779
Sample ID:	FO 080767 Duplicate same this site?	\sim Dupe ID: \mathcal{N}/\mathcal{A}	
	nple identification # on COC:	Any deviations from standard proc	-
comments:	Composite was primarily free	silt w/ organiz matter w/ 1 ad stricky.	ittle percentage
ot sand	5. Compossive was dare to row	a nicey.	

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	CITY OF PORTLAND ENVIRONMENTAL SERVICES Field Operations 6543 N. Burlington Ave., Portland, OR 97203-5452	
	INLINE SEDIMENT TRAP FIELD DATA SHEET	
	Project Name: PORTLAND HARBOR STORMWATER SAMP Project No.: 1020.005 Date:	By: J×B/JJM
	Site Address: N, Ramsey BLUD / Simplot Pt Code: Basin: 10/15/07 DF 53A-ST5 DF 53A	Hansen ID: 4AA170
	SECTION 1 – INSTALLATION INFORMATION	
	Traffic control and/or site access concerns: Describe flow conditions and depth and/or any water at time of install (does river appear to ba	
-	* KKK tracks @ Simplot entrance off N, Ransey line intermittently?): 10/15/07 1.51	12.0 for
	·Node is ingrassy area, NO TC required · Flow conditions during instal included a depth of 0,4" & 155 fps	llation
	· River does appear to back up in	nto node.
	Describe sediments in pipe if present (depth, sampleable quantities, lateral extent, etc.):	
	No visible sedment present in line	
		diameter es):
() id traps installed "35" # 45" unstream of 48" EOP inlet	nce from MH (feet):
	ے D TRAP SITE DIAGRAM (Sketch map of the lateral(s) and layout of manhole, showing approx sed. trap location, manhole elevation and inline sediment if present. using the top of the page as north):	Orient drawing
	OF53A-STS EST BOTTLES INSTALLE	
		>
	EOP LEDDE EOP	-Q
	0153A 18.51 deeptu to, 1-2351-1 19 10153A MH ELEV	
	5KB 111 34511 1	
($(-Q) = (-Q)^{1/2} + (-Q)^{1/2$	upstream Let 23511

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	Upstream bottle = 53A_ST5_B)					
				53A_5T5_82	· .	
-,	Pt. Code: 53A-5T5	SEC	TION 2 - MONTHLY	FIELD CHECK INFORMATION	Hansen ID AAA-170	
) .	ate: 1/28/07 By: MJS/JXB	Estimated sed depth	10/15/07 JX3 Bottle 2- 20,01"	Bottles removed and replaced? YN	Archived ID:	
	Comments: 5n hardware 3 wior z no c	all amount of oth bottles were boor. Trace amo		hung up on mostream mounting www.s.slightly turbid, clear in pilected.	Sticker	
	Date: 12/17/07 By:	Estimated sed. depth inches): Bottle I - 0-35 ¹¹	per bottle (% & Bottle 2 - 0.25 ^{°°}	Bottles removed and replaced? Y() If removed which one?	Archived ID:	
	Comments: Up slightly turb	Bottle stream bille (BI) have id standing water - s n bettles.	Bottle - Islightly morescaline Seas appear to be Fi	ut than B2. Bottles both full of re. Small aquatic organisms (dophna)		
	Date: <i> 25 03</i> By:	Estimated sed. depth inches): Bottle <i>i</i> - 0,5 ¹¹	Bottle 2- 0-35"	Bottles removed and replaced? YN If removed which one? NA Pine needs present on the Surfuc of Bi. No discernable oder presen		
	JXB/CAP Comments: Up (C3% by volu Sovm work 1	Bottle - 25% spream bottle (53f umulated sed. Oc me) of accumula Large ghantity	Bottle < 3% +-STS-BI) had ap winstream bottle ted sed, Both bottle	prox. 0.5" (25% by volume) of (537-575-32) had approx. 0.35' les were fuil of stightly turbid Maded around suppress of traps	· · ·	
	Date: 2-25-08):	Estimated sed. depth inches): Bottle 1 - [, 0	per bottle (% & Bottle 2 - 0.35 "	Bottles removed and replaced? Y(N) If removed which one?	Archived ID:	
	Comments: \	Bottle <107. Ipstream bott diment. Down th bottles we	Le, Bi had a	pprox. 1.0" accomulated BZ, had approx. 0.35" sed why turbid stormwater No 00	5×B brdeteard	
	Date: 3/27/08 By:	Estimated sed. depth inches):	per bottle (% & Bottle 2 - (D/s) 0.5- Bottle - 016"0×5£11.	Bottles removed and replaced? Y(N)	Archived ID:	
-	Comments: AR A DHESIGI ON SENIALI ON	Bottle - 1"07500" AFY AEBAIS ON TA FULL OF STORM 1451 DE OF 130772 4 1NSIDE WALL	PP BUS NOT BOTTLE T WATER, BOTTLE I : K BOTTLE 2: KAIR	PLEAD TOPS 13455 KCW = 1.5" BOTH BOTH BIRLY SETTLED, 210 APPARENT SEDIME Y SETTLED ; 210 APPARENT ANDESICI OR		
	Date: 4-30-08 By:		Bottle 2 ~ 0.6"	Bottles removed and replaced? Y/N	Archived ID	
	Comments: C Cov.	Irg. debris f	and coverin	g BI (upst.) (approx.5). h bottles fill of fairly ment oder. BI had sheen		
-	Date: 5/6/08 By:	Estimated sed. depth inches): Bottle / 1/1/11	Bottle 2- NOG"	Bottles (Emoved and replaced? (Y/N If removed which one? /BoTH /BOTTLES	Archived ID:	
5				STAGNAUX' ODOR, AT LEAST PERIAN L PROMPTED BY RISIUL RIVER LEVEL VE SAMMES COLLECTED TO DATE	53A-515 61462 755465 376108	
Į	.`	PS/EOPMS/Inline Sodiment Tr		of deployment period JX3		

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Page 2 of 3

Data		Dettine remended and realized 0. V/AL	
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle -		/ ·
)	Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Date:	Estimated sed. depth per bottle (% & inches):	Bottles removed and replaced? Y/N If removed which one?	Archived ID:
By:	Bottle - Bottle - Bottle - Bottle -		
Comments:			
Pt. Code: 53A-ST5	SECTION 3	- COMPOSITE SAMPLE	Hansen ID AAA170
Sample ID:	FO 080768 Duplicate sam	ple collected at Dupe ID:	

×,

	mple identification # o				m standard proced	
omments:	Composite n Composite was	brownish-blac	kin color w	v small organic	content (- sands. sludge)

ENVIRONME Water Pollution 6543 N	F PORTLAND NTAL SERVICES on Control Laboratory Burlington Ave OR 97203-5452
INLINE SEDIMENT TRAP SAN	IPLE PROCESSING DATA SHEET
Project Name: PORTLAND HARBOR STORMWATER SA	MP Project Number: 1020.005
Sample Processing Conducted By:Sample Pt. Code:ECH53A - 5TE	
Basin: 53A Hansen ID: AA	
Sediment Trap Location Description/Address: N. Ramsky Blud Simple	Scotraps are located 25 upstream. 1-from center of node AAA170, Traps are 1-installed 235" and 45" upstream of 48" of ECP intet No loteral connections
	CESSING/FILTRATION NOTES
Filter Equipment/Method: Portland Harbor, 90-millimete [Field Operations (FO) Standa	r (mm) stainless steel filter support w/conical glass microfiltration system and Operating Procedure (SOP) 5.01b & Evaluation of Microfiltration chnical Memorandum – September 18, 2007].
Filter brand, grade, porosity in micrometers (µm) and mater	ial (e.g., Fisher Scientific, qualitative P2, 1-5 μ m cellulose filter paper): DapeV - \overline{B} (\overline{B} , \overline{B} , \overline{B}) \overline{B} (\overline{B}) \overline{B}) \overline{B} (\overline{B}) \overline{B}) \overline{B} (\overline{B}) \overline{B}) \overline{B}) \overline{B} (\overline{B}) \overline{B}) \overline{B}) \overline{B} (\overline{B}) \overline{B}
Sediment Trap Bottle ID:63A-ST6-BI-	Sediment Trap Bottle ID: 53A-ST5 BZ-
Total Est. Depth of Accumulated Sed in Bottle (inches):	" Total Est. Depth of Accumulated Sed in Bottle (inches):
Sample Processing Start Sample Processing End Time: 1000000 Time: 258	Sample Processing Start Time: 36 Sample Processing End Time: 1430 PST TXB
Number of Filters Used: 5x P4, 4-8 MM	Number of Filters Used: 4×74, 4-8 Mm
Est. total volume of Ultra Pure DI used to remobilize adhered stormwater solids within bottle in milliliters (mL):	Est. total volume of Ultra Pure DI used to remobilize adhered stormwater solids within bottle in 200 W milliliters (mL):
Tare Weight [empty jar in grams (g)]	Tare Weight [jar and filtered sed. from Bottle1 in grams (g)]: 2343
Dewatered/Filtered Sed. Weight (g): 99.50 - Colstors	Dewatered/Filtered Sed. Weight (g): 35,02
Sample Processing Notes/Comments: Filtered zed is dark, stude with high organic	Sample Processing Notes/Comments: Fi Fleve) Bed 18 dav & Studer with N.M.
decomposing organic odor.	Porganic contentostrong
Decompositive organice outon.	Street noted
Visual Description of Final Composite Sample B	A SHALL
COC Time (time composite jar is capped):	
Sample ID: FO 080768 Duplicat	e sample collected? Y DUPLICATE ID
Duplicate Sample ID on COC: Any dev affix FO number sticker Describe	iations from standard operating procedures?

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Page of Project No. 1020.005 Project PORTLAND HARBOR STORWATER SAMP. Date 0/3/08 Location 53A-ST5/WPCL FLELD LAB SUDJECT BASIN 53A SED. TRAP PROCESSINGBY ECH Der, 90-millimeter - Betup decened Portland Hart ease steel the support with 013108 Stain ίλα μλα class microfiltration Contral uztem OIA a Mclean Versi FOOD VED V CI lab cart wi Soaker paper. Flushed Master-Flex Deristattic tubinacotto Bide avm of Erlanneyer Alask itration system and to povietalt 1. Mireval DVIND Sedimen ook photo of 5-B1 38 8 Po trad to: He Drigk to process we 138from sediment to tracess × 16 SOUMIN RI -54MXV.Sw Tehed to a P4, 4-8 um 020ow-Huravela Blow vates 10 NUEC Hevin Mir ave ha 31 L ein hiltered. Sediment of Her. Att Of ect SCRAPDIN into composite iar change no ve SADIMENT 31 EVY ECH hi and NO 0t 80/10 500 (PD)as d -00 m to VIAUS Doffle ALVI C to inside INA art 20 VAT evine complete. shote Attachments

DAILY FIELD REPORT **City of Portland** Environmental Services Page of Project PORTLAND HARBOR STORMWATER SAULP Project No. 1020.005 LOCATION 53A_ST5/WPEL FIELD LAB Date 6308 SUBJECTBASIN 53A SED TRAP PROCESSINGBY ECH used filters. 3 Took photo of 53A-ST5 BZ sed wen rup bothe prier to pracessing 1316 Beran Drolessine Se d'inent From ilterive Based B2 DIA begen-SA-215 8 um 355 photo 5 erea inen Bea Continued -B7 ittering 10 Envouen. -LV20 Scrapping am. placed Frv Bed inter 0. min u Ritz. compasite jar, Maneine NAS I Drive AR hud of UPDI to Visuspano Vard ~ 200 m Seliple a-f HraD Doff inside wa and-1.0 1430 even and DA COVERI 122 1 -2 NR alt 1432 Sed ment in salute OM DOSI 050 sample av Ectt - composited Bample. ook photo of 420 Attachments LAV intria. A A OC

) 		
	WIRONMEN Water Pollution C 6543 N. Bu	PORTLAND TAL SER Control Laboratory rlington Ave 197203-5452	VICES		
	NT TRAP SAMP		ssing d	ATA SHEET	
Project Name: PORTLAND HARBOR	STORMWATER SAMP	, 	Project Nur	nber: 1020.005	
Sample Processing Conducted By:	Sample Pt. Code:	Removal Dat		Processing Date:	
JXB	53A-5T1	5/6/0		6/4108-6/5/08	
Basin: 53A	Hansen ID: AAA1=	+1	Subbasin:	NA	
Sediment Trap Location Description/Ad					
Sed. traps located ~10" up installed on side walls of	Bhream of mar 24" pipe <u>dve</u>	hole hode ? to concrete	AAA171	is in 24" pipe invert.	
SEDIN	IENT TRAP PROCI	ESSING/FILT	RATION N	OTES	
[Field	Operations (FO) Standard nent for Phthalates Techni eters (µm) and material	Operating Procedu cal Memorandum - (e.g., Fisher Scien	ire (SOP) 5.01 - September 1 htific, qualitativ	e P2, 1-5 µm cellulose filter paper):	
Sediment Trap Bottle ID: 53A-ST	<u>1 - 81 - 81 - 81 - 81 - 81 - 81 - 81 - </u>	Sediment Trap	Bottle ID:5	3A − ST4 − B2 − ated Sed in Bottle (inches): "∂ 35"	
Sample Processing Start Sample Time: 1405 PST (11102) Time:	e Processing End	Sample Proces ^{Time:} 07/8 PS	sing Start	Sample Processing End	
Number of Filters Used: $6X P2, 4-5um$ Number of Filters Used: $6X P2, 4-5um$ Est. total volume of Ultra Pure DI used to remobilize adhered stormwater solids within bottle in milliliters (mL):TXBEst. total volume of Ultra Pure DI used to remobilize adhered stormwater solids within bottle in milliliters (mL):TXBEst. total volume of Ultra Pure DI used to remobilize adhered stormwater solids within bottle in milliliters (mL):TSB $-5um$ Tare Weight [empty jar in grams (g)]:134.1qTare Weight [jar and filtered sed. from Bottle1 in grams (g)]: ^/48.9q					
Dewatered/Filtered Sed. Weight (g): 14.	5	Dewatered/Filter		J	
Sample Processing Notes/Comments: primarily Filtered wet sediment primarily consisted of fine silts sands w/minor organic matter. Filtrate was clear w/out any discoloration No sheen present. Observed minor/siight PAH odor. Filtered wet sediment was braunish red. Wo sheen or odor observed. Filtered					
Visual Description of Final Composite Sample mas of composite Sample was primarily Fine sills a singur of ganic Wrest Speces. COC Time (time composite jar is Total Dewatered/Filtered Sed. Weight in Sample Jars Collected (number, size, full or partial).					
capped): /ost PST gra Sample ID: FO 08076 affix FO number sticker	50169	ample collected?		x particully full 4-02 amover y IPLICATE ID	
Duplicate Sample ID on COC affix FO number sticker	Any deviati Describe:	ons from standar	d operating I	procedures? Y/	



Page <u>1</u> of <u>2</u>
Project PORTLAND HARBOR STORMWATER SAMP. Project No. 1020,005 Location WPCL FIELD LAB/S3A-ST1 Date 6/4/08 Subject BASINS3A SED. TRAP PROCESSING By JXB
1350 PST- Captured photo of SJA-ST1-B1 adjucent to dry erase board. 1355-Accembled decord Portland Howing filter anarystus Equipped
1355 - Assembled decond Portland Harbor filter apparatus. Equipat microfiltration system W/a qualitative P2 (1-5mm) cellulose filter. Flushed section of Master Flex peristaltic tubing W/DI & UPDI hater. Attached peristaltic tubing to peristaltic pump & side-arm
OF Erlenmeyer Flask in microfiltration system. Primed Filter W/ UPDI.
1405-Began to process 53A-STI-BI. Filtrate is clear w/ no discernable odor. 1-5 um filter appears to be working well - fast flow-through rate of no clogging. Captured photo of first spent filter on filter stand of filtrate.
1414 - Captured photo of filtered sed on surface of second P2, 1-5 un filter. Filtered sed from 534-571-B1 was primarily fine sills & sands in the small particle range w/ minor amounts of organic matter. Primed filtration
system W/ UPDT after scrapping Filtered sed off of spent filter W/a decond stamless spatula. Filtered sed was placed into a 4-07 amber wide-month sediment jar. Placed a new P2, 1-5 um Filter on Filter Stand & continued to process 53A-STI-B1. Filtrale was clear Who hue.
1423-Captured photo of filtered sed on surface of third P2, 1-5 mm filter Primed filter stand, placed fourth P2, 1-5 mm filter on to filter stand, of
poured off last 100-200 mL of archived sed. trap bottle contents.



	Page 2 of 2
Project PORTLAND HARBOR STORMWATER SAMP Location WALL FIELD LAB/53A-ST1 Subject BASIN 53A SED, TRAP PROCESSING-	Project No. <u>1020,005</u> Date <u>6/4/08</u> By <u>X</u> B
1442-Captured photo of filtered sed on surface Filtered sed primarily consists of small partic sands w/minor amounts of organic matter. although there is a minor PAttodor. Scrapped	No visible sheen;
of filter using decond stainless spatnic & place 407 sample jar. Primed filter stand "/UPDI & filter onto filtration system. Used 200 mL of solids adhered to inside wall of archived sed	placed sixth P2,1-5um - upoi to resuspend
Filtered remobilized solids. 520 - Scrapped off filtered sediment off of sur filter. Filtered wet sediment was primarily sm	rface of sixth P2, 1-Sum
sands. Primed filter WUPOI, Switched to a P4, to increase flow through rate of to capture la solids in archived sed. Frap bottle.	4-8 cellulose filter
1526 - Captured photo of last filtered sed from r supernate slury scrapped off filtered sed To of filtered net sediment from 53A_ST1_B1	tal weight in grams L=14.8g. Placed sample in Labfridge Overnight.
1530 - Captured photo of spent filters from 53 1535 - Captured photo of final filtered wet se B1.	
1538 - Secured microfil tration system Valuminu Clase off system Greate a closed-system, from Lab atmosphere Attachments J&3 6/4/08	

of _ Page _ Project PORTLAND HARBOR STORMWATER SAMP. Project No. 1020.005 Location WPCL FIELD LAB/53A-ST1 Date 6/5/08 Subject BAGEN 53A SED, TRAP PROXESSING By JXB 0705 PST- Removed aluminum Foil of Lap Parafilm from Portland Harbor microfiltration system, Foil & Parafilm was secured around filter housing & peristaltic tubing at the completion of 53A-STI-B1 processive during the afternoon of 6/4108, to close-off the system to the Lab's atmosphere. Equipped filtration stand w/ a qualitative P2 (1-5 mm) cellulose filter paper. Primed derand system w/ UPDT water 0714-Captured photo of archived sed. trap bottle 53A-571-B2 adjacent to dry erase board. 07-13- Turned on peristaltic pump & hegan to praces 53A-ST1-BR Filtrate & clear W/no discernable odor or sheen. Fast flow-through rate & little-to-no clogging of filter w/initial decant of supernaturet. Removed first filter from system- no sampleable filtered sed. present. Captured proto of filtrate & first qualitative filter. 0733- Placed second P2 1- Sum filter on filter stand, primed system, and turned on peristaltic pump. Filtrate continues to be Clear w/no visible sheen or discernable odor. Filtered ~800mL of supernatant before captured solids began to adhere to Surface of Filter 0753 - captured photo of filtered wet sectiment on surface of the second P2, 1-Sum filter. Filtered sed. promoting consists of fine silts & sands in the small particle range. Scrapped filtered Wet sed. from surface of qualitative filter w/ decond stainless sature Attachments and placed filtered sed. into 4-07 amber wide mouth sample jan



Project PORTLAND HARPAR STORMWATER SAMP Project NO. 1020.005 Location WRCL FIELD LAB/53A-ST1 Dote 6/5/08 Subject BASIN S3A SED TRAP PROCESSING. BY JXB 0301- Equiped filtration system w/ third P2, 1-5um Filter. Primed system w/ WRDI of turned on peristelitic pump. Centinued to process S3A-STA-B2. 0325- Captured photo of Filtered wet sed incust on surface of Fine Silts of sawds W/minor organics, from Filter on Filter stand, primed filter lemond filtered sed, which polleced intro sample jar Using decord staintess spatula. 0330-Placed fourth qualitative P2, 1-Sum Filter on Filter stand, primed filter Juppor, and tunned on peristelitic pump / ontinued to process last 200 mL of Supermeted captured stamwater solids. 0342-Captured photo of Filtered wet sediment on surface of Fourth filter Scrapped of Filtered wet sediment on surface of fourth filter Scrapped of Filtered wet sediment on surface of fourth filter Scrapped of Filtered wet sediment on surface of fourth filter framed on peristelitic pump. Ponted *(25 mL of UPDT) usater into sed trap bottle. Agitated bettle of remobilized solids adversed to Inside wills of sed trap bottle. Agitated bettle of remobilized solids adversed to Inside wills of sed trap bottle. Agitated bettle of combilized solids adversed to Inside wills of sed trap bottle. Proved off remobilized solids adversed to Inside wills of sed trap bottle. Proved off remobilized solids adversed to Inside wills of sed trap bottle. Proved off remobilized solids adversed to Inside wills of sed trap bottle. Placed hed the worny de -> 6/2008 JX ⁹ /2/6/08 09756-Captured photo off remobilized sol trap bottle. Agitated bottle graved off periodic to sed trap bottle. Agitated hottle fourted of periodic roles to sed trap bottle. Agitated hottle fourted of remobilized sed through Filter System, after ogniphing system w/ sixth qualitative P2, 1-Sum Filter System, after ogniphing system w/ sixth qualitative P2, 1-Sum Filter	· · · · ·		· · · · · ·	Page <u>2</u> c	of <u>3</u>
pracess 534-5TA-BZ. 0825-Captured photo of filtered wet sed incent on surface of third filter. Removed filtered sed, which primitive consisted of Fine silts & sands Winnow organics, from Filter & placed intro sample for using decord stainless spectrum. 0830-Placed fourth qualitative P2, 1-Sum filter on filter stand, primed filter Wuppt, and turned on peristaltic pump. Continued to process last 200 mL of supernated captured stormwater solids. 0842 - Captured photo of filtered wet sediment on surface of fourth filter Scrapped of filtered wet sediment on surface of fourth filter Scrapped of filtered sed. from qualitative P2, 1-Sum filter, Primed filter & proto of filtered sed. from qualitative P2, 1-Sum filter, placed mo sample jar. 0848 - Equiped filtration system w/ fifth qualitative P2, 1-Sum filter, placed mode sed trap bottle. Agitated bottle & remobilized solids adheed to Inside walls of sed. trap bottle. Roured off remobilized solids adheed through filter system. 0956 - Captured photo of remobilized, filtered uset sed on surface placed through filter spectra. 0956 - Captured photo of remobilized filtered uset sed on surface of filter system. 0956 - Captured photo of remobilized filtered uset sed on surface of filter System. 0956 - Captured photo of remobilized, filtered uset sed on surface of filter Agitated bottle, filtered uset sed on surface of filter system. 0956 - Captured photo of remobilized, filtered uset sed on surface of filter. Added another ~125 mL of UPDT water to sed trap bottle. Agitated bottle, ponred of remobilized sed through filter System, after equiping system W/ sixth qualitative P2, 1-Sum filter. Attachments	Location WPCL FIEL	0 LAB/ 53A - ST1	· · · · · · · · · · · · · · · · · · ·	Date <u>6/5/08</u>	005
third filter. Removed filtered sed, which protony in consister of Fine silts & sands Wininer organics, from Bilter & placed intro sample jar using decond stainless spatula. 2330-Placed fourth qualitative P2, 1-Sum filter on filter stand, primed filter W/UPDT, and turned on peristaltic pump. Centinued to process last 200 mc of supernated captured stormwater solids. 2842 - Captured proto of Filtered wet sediment on surface of fourth filter Scrapped of filtered sed. from qualitative filter & placed filter # filteration system w/ fifth qualitative P2, 1-Sum filter, Primed filter & turned on peristellic pump. Poured ~125 mL of UPDT water into sed. trap bottle. Agitated bottle & remobilized solids adneed to Inside walls of sed. trap bottle. Roured off remobilized solids adneed to Inside walls of sed. trap bottle. Poured off remobilized solids through filter system. 0956 - Captured photo of remobilized, filtered uset sed on surface of Silter System. 0956 - Captured photo of remobilized filtered uset sed on surface of Silter System. 0956 - Captured photo of remobilized filtered uset sed on surface of Filter & filter & poured of remobilized uset to sed trap bottle. Agitated photo of remobilized solids through filter. System, after equipting system w/ sixth qualitative P2, 1-Sum filter System, after equipting system w/ sixth qualitative P2, 1-Sum filter			a wy third F on peristally	2,1-5mm Fil icpump. Contin	ter. wed to
primed filter W/WPDr, and turned on peristaltic pump continued to process last 200 mL of supernated captured stormwater solids 0842 - Captured photo of filtered wet sediment on surface of fourth filter. Scrapped of filtered sed. from qualitative filter & places into scrupie jear, 0848 - Equiped filtration system w/ fifth qualitative P2, 1-Sum filter, frimed filter & turned on peristedtic pump. Poured ~125 mL of UPDT. Water into sed. trap bottle. Agitated bottle & remobilized solids adheed to Inside walls of sed. trap bottle. Poured off periobilized solids through filter system. 0956 - Captured photo of remobilized, filtered under sed on surface of filter. Added another ~125 mL of UPDT. Water into sed. trap bottle. Poured off periobilized solids through filter system.	third filter. Rem Silts & sands W/m	oved filtered sed, there organics, from	which problems	aly consisted of	fine
Places into sample jar, 0848 - Equiper filtration system w/ fifth qualitative P2, 1-5mm filter, Primed filter & turned on peristeditic pump. Poured ~125 mL of UPPT water into sed trap bottle. Agitated bottle & remobilized solids advered to inside walls of sed trap bottle. Poured off remobilized solids through filter system. 0956 - Captured photo of remobilized, filtered wet sed on surface of fifth filter. Added another ~125 mL of UPPI water to sed trap bottle. Agitated bottle & poured of pencipilized sed through filter 3ystem, after equipping system w/ sixth qualitative P2, 1-Sum Ailter Attachments	primed filter w/1 process last 100.	npor, and turned a mc of supernated	n peristallic p captured stor	hump Continued mwater solids	t-s
Primed filter & turned on peristeditic pump. Poured ~125 mL of UPPT water into sed trap bottle. Agitated bottle & remobilized solids adneed to inside walls of sed trap bottle. Poured off remobilized solids through filter system. <u>Photo placard had the wrong date -> 6/4/08 Jx86/6/08</u> 0956 - Captured photo of remobilized, filtered wet sed on surface of fifth filter. Added another ~125 ml of UPNI water to sed trap bottle. Agitated bottle & poured of remobilized sed through filter System, after equipping system ~/ six th qualitative P2, 1-Sum Alter Attachments	0842 - Captured pi fourth filter Scra places into scrups	pped of filtered x pped of filtered s e jeur,	vet sediment ed. from que	on surface of alitative filter	2 4
Photo placard had the wrong dale -> 6/4/08 J×3 6/6/08 0956 - Captured photo of remobilized, Filtered wet sed on surface of fifth filter. Added another ~125 ml of UPNI water to sed trap bottle. Agitated bottle & ponned of remobilized sed through filter System, after equipping system w/ sixth qualitative P2, 1-Sum filter Attachments	Primed filter \$ to water into sed. t to inside walls of	rap bottle. Agitat sed. trap bottle. F	tic pump. Pou	emobilized solic	of UPDI Is adhered
	0956-Captured pl of Fifth Filter. bottle Agitated 1 System, after equip	photo placard who of remobilize Added another ottle & ponned of ing system w/ sin	22, Filtered i 125 ml of UP remobilized = sthqualitation	het sed on s In I water to se sed through fi	urface ed trap Her



		Page <u>3</u> of <u>3</u>
Project PORTLAND HARBOR ST Location WPCL FIELD LABJ Subject 13ASIN 53A SED. TR	53A-571	Project No. <u>1020.005</u> Date <u>6/5/08</u> By <u>5xB</u>
1029 - 50 50 0		0.14
		2. Scrapped the last of the
filtered wet sediment T		
placed filtered sed int	o sample jar. Fill	tered sed was primarily
fine silts & sands.		
1049 - Captured photo 0	F spent Filters.	
	<u> </u>	
1052- Thomas Thoroughly		
Subsample material From		
amber wide month sa	mple jar. Captur	ed photo of homogenized
composite. Placed compo		-ST1 into theb Fridge
for subsequent analysi:	5.	
lotal weight	of Filtered wets	ediment for 53A-ST1 =
~ 50,69		
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
	· · · · · · · · · · · · · · · · · · ·	
	· · · · · · · · · · · · · · · · · · ·	
Attachments	a da anti-	

	CITY OF PC	RTLAND			
E	IVIRONMENT Water Pollution Col 6543 N. Burlin Portland, OR 9	ntrol Laboratory ngton Ave	VICES		
	NT TRAP SAMPL	E PROCE	SSING E	DATA SHEET	
Project Name: PORTLAND HARBOR	STORMWATER SAMP		Project Nu	imber: 1020.005	
Sample Processing Conducted By:	Sample Pt. Code:	Removal Dat		Processing Date:	
WCR	53A-574	5/6/0		6/5/08	
Basin: 53A	Hansen ID: AAA 1	79	Subbasin:	NIA JKB	
Sediment Trap Location Description/A SED TRAPS WERE JUSTAL TO Jan Thet From T SYBLIDIOS	LEO N 10' UPSTR	EAM FROM	n CRAT	ER OF WORE BAA 179	
	MENT TRAP PROCE				
[Field		perating Procedu	ıre (SOP) 5.0	w/conical glass microfiltration system 01b & Evaluation of Microfiltration 18, 2007].	
Filter brand, grade, porosity in microm					
ISHMAZ <u>COMPLYINGC QUALITATI</u>	<u>A CELLULOVE KILIE</u>	<u>K MARAR P7</u>	<u>. 1-5 RM</u>	<u> </u>	
Sediment Trap Bottle ID: <u>SA</u> -S7	4-81-	Sediment Trap	Bottle ID:	SJA-ST4-132-	
Total Est. Depth of Accumulated Sed i		Total Est. Dept	h of Accum	ulated Sed in Bottle (inches): ************************************	
Number of Filters Used: 2		Number of Filte	ers Used:	2	
Est. total volume of Ultra Pure DI used to remobilize adhered stormwater solids within bottle in milliliters (mL):		Est. total volume DI used to remot stormwater solid milliliters (mL):	bilize adhered s within bottle ノノクズム	t ein Ca	
		Tare Weight [jar and filtered sed. from Bottle1 in grams (g)]: 160,7 Dewatered/Filtered Sed. Weight (g): 37,3			
Dewatered/Filtered Sed. Weight (g): 2	.6.3 g	Dewatered/Filter	ed Sed. Weig	ght (g): 5/15	
Sample Processing Notes/Comments: BOTH BOTHE I & II APPE WAS KASY, MOSTLY ORGA	AR THE SAME	Sample Proces	SICIC ALIC	O VISUAL ASPECTS. FICTR	
Visual Description of Final Composite	<u>I</u> AKK~UBOLO	(LA 11/2 / 3/R)	w21, S7/S	Gey CEUMAY.	
	tal Dewatered/Filtered Se ams (g): 63,6	d. Weight in	Sample .	Jars Collected (number, size, full or <i>I SAR , 4 0フ い 3/4 K</i> &&	
Sample ID: FO 080767	7 Duplicate sa	mple collected	ν (N) - D	UPLICATE ID	
Duplicate Sample ID on COC: affix FO number sticker	Any deviation Describe:	ns from standa	rd operating	procedures? YN	

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: _	Page of
•	Project PORTIAND HARDOR STORMWATER SAMP Project No. 1020,005
	Subject BASIN 53A SEO TRAP PROCESSING By WCR
	FROM JXB, & SOP SIDIB. SET UP DECOMMED PORTLAND HARD
	90 mm STAILIESS STEEL KILTER SUPPORT of COLICAL GLASS MICH
E C	0845 FILTRATION SYSTEM ON LAB CART COVERED W/ CLEAN VERSI
	DRY LAB SOARER PAPER. KLUSHED MASSER FLEX PERISTALTIC
	TUBING W/ DI & UPDI. ATTACHED PERISTALTIC TUBING TO SIDE
·	ARM OF ERLEAMEYER FLASK 14 MICROFILTRATION SYSTEM : 70
.	PERISTALTIC PUMP, HISERTEN A PZ I-SUM FILTER
	0845 - BEGALI KILTRATION, FROM S3A_STY-BI
	0852 - REALIZED I DID NOT TAKE A PHOTO OF SJA_STY_BI PRION
·	TO KILTRATION, THERE IS NIS" OF SAMPLE REMAINING IN BOTTLE
.	
	0853 - TOOK PHOTO OF SAMPLE BOTTLE W/ REMAINING SAMPLE, W/
-	DRY-ERASE BOARD, TOOK ALLOTHER (CLOSE-UP)PHOTO TO SHOW
⊹⊦	SEMMENT & CLOUDY LIGUID ABOUT IT SAUT OFF DERISTALITIC
₋⊦⊢	PUMP, TO PERFORM KILTER CHAMPE.
·	
<u> </u>	0909 TAKE TARE WT OF SAMAUE JAR (407 AMBER) = 134.3g
-	CHALLOC FILTER PAPER TO FISHER SCIENTIFIC GUALIDATIONE 124 4-8 p
·	PRIME W/ UPDE. RESUME FILTRATION OF SAMPLE NOW ACITATING SAM
┝	TO MOBILIZE SOLIDS. P2 1-SUM FILTER PAPER HAS ALMOST 210
Ń	SOLIOS OHIT. SCRAPEN WHAT THAY BIT OF SOLIDS T COULD OFF FILTE
	AND THIS JAR.
	0923 USED 100 m 1 OF UPDI TO MOBILIZE SOLIDS DEMAJULATION SAMPLE
	BOTTLE, BOTTLE HOW EMPTY OF ALL SOLIDS & LIQUID
L	Attachments

of Page Project PORTLALIN HARBOR STORMWATER SAMP Project No. 1020,005 Location FIRLO LAB 53A_ST4 Date 6/5/08 BY WCR Subject ISASIN SZA SEO TRAP PROCESSING 0932 TOOR PHOTO OF FILTRATE 14 ERLEHMEYER FLASK IS SLIGHTLY TURBIN W/ VELLOWISH COLOR TOOK PHOTO OF P-2 1-5 MM FILTER PAPER AFTER ATTEMPTING TO REMOVE TIMY AMOULT OF SOLIDS. FILTER APPEAR) HO DIFFERENT THAN PRICATO SCRAPHUG 0938 TURY OFF PERISTALIT PUMP. SEDIMENT OU FILTER PARER ACU HAS DRYING CRACKS AND LINK WORMS MLI SEDIMENT NO LONGER WIGGLING ABOUT EASILY. TOOK PHOTO OF SEAMENT, WHILE STILL 14 FILTRATION APPARATUS, AUD ANOTHER PHOTO W/ TOP PART OF GLASS (FUHNEL) REMOVED. SCRAPED FILTER PARER W/ SPATULA TO TRAUSPER SENIMENT TO YOZ AMBER SAR. 0951 TOOK PHOTO OF BOTH FILTER PAPER KLEMEUTS, SIDE-DY-SIDE. P21-5 MM O4LEFTSIDE (LIGHTER ILLCOCOR/SEDIMENTS) P44-8MM ON RIGHTE an SIDE. WEIGHT OF 40 4 07 AMBER JAR W/ SENIMEUT = 160,70 TARE = 134.39, WEIGHT OF SAMPLE = 26.39, FROM SSA-STY-B1. 1016 TOOK PHOTO OF BOTTLE I (B1) SEAMENTS 14 407 JAR ELID OF BOTTLE 1 ACTIVITIES Attachments

of Page Project PORT LAUD HARBOR STORMWATER SAMP Project No. 1020.005 Date 6/5/08 Location FIELD LAB, S3A-STY Subject BASIN 53A SEO TRAP PROCESSING BV LUCR 1023 REBUILD FILTRATION APPARATUS FOR BOTTLE Z (OF SJA-STH. BZ, TAKE PHOTO OF BOTTLEZ. -7 TWO PHOTOS, ACTUALLY; THE FIRST W/ THE DRY-ERASE BOARD 14 FULL VIEW, THE SECOND A CLOSE-UP OF BOTTLE KILTRAJUU BEGUU W/ A P2 I-SUM FILTER KLEMEUT, LEULUSE 1033 SUPERMATANT PASSES THROUGH PS 1-5 pm VERY QUICKLY, WHITIL LAST 1/2" OF SUPERMATAUT IS POURED 121. 1039 PHOTO OF P2 1-5 UM FILTER TAREY, PRICE TO SOLIDS SCRAPHIC 1042 PHOTO " AFTER SCRAPHIC. TILNY AMOUNT OF VOLUME OF SAMPLE RETRIEVED FROM FILTER PARER REMOVE FILTER PAPER 1045 IUSERT PY 4-8 um FILTER PAPER INTO FILTRATION APPARATUS START PERISTALTIC PUMP, RESUME FILTRATICH. 1052 ADD 100 m/ OF UPDI TO SAMPLE BOTTLE TO EUSHOUT SOLIDS, + 10 m/ MORE, BOTTLE HOW EMPTY. 1125 DUMP TURNED OFF, WATER RENOVED FROM LAST OF SAMPLE. TAKE PHOTO OF SEDIMENT ON THE FILTER 1143 TOOK 2 PHOTOS OF SAMPLE JAR WITH ALL SAMPLE SOLINS COLLECTED. SAMPLE THAS BEEN COMPOSISED FOR COUSISFEDOV. WHEILHT OF SOLIDS FROM BOTTLEZ = 37.3 9, CAP JAR PLACE IL STAGING AREA FRIDGE DOU TAKE PITOTO OF BOTH FILTERS USED, PZ I-SUM FILTER DOULEFT (THAT LIGHTER COLORED) PY 4-8 Mm IS OU RIGHT. Attachments

$\frac{1}{2} = \frac{2^{2}}{2}$ $\frac{1}{2} = \frac{2^{2}}{2}$ $\frac{1}{2} = \frac{2^{2}}{2}$	(· .		
	EN	CITY OF P VIRONMEN Water Pollution C 6543 N. Bur Portland, OR	TAL SERN ontrol Laboratory lington Ave	/ICES		
INLINE SEI	DIME	NT TRAP SAMP	LE PROCES	ssing d	ATA SHEET	
Project Name: PORTLAND HA	RBOR	STORMWATER SAMP	_	Project Nu	mber: 1020.005	
Sample Processing Conducted	By:	Sample Pt. Code: 53A - ST2		ate: Processing Date: $6/9/08$		
Basin: 53A		Hansen ID: AAA	79	Subbasin:	NA	
Sediment Trap Location Descri	otion/Ad	dress: N. Rivergate	EN Ramsey L	sival Se	d traps insta	lled approx.
		4-6' north of	Vode AAAIT9	in 36" L	ine.	, .
				<u> </u>		
	an altra de la calencia	ENT TRAP PROCE d Harbor, 90-millimeter (m				ofiltration system
Filter Equipment/Method:	[Field C	Derations (FO) Standard	Operating Procedu	re (SOP) 5.0	1b & Evaluation of M	
Filter brand, grade, porosity in r			e.g., Fisher Scien			se filter paper):
Sediment Trap Bottle ID: 52	4-sta	2 - 81 -	Sediment Trap	Bottle ID:	534 _ STZ _ BZ	
Total Est. Depth of Accumulate	d Sed in	Bottle (inches): 0.3	Total Est. Depth	n of Accumu	lated Sed in Bottle	(inches): O.S
Sample Processing Start Time: 0913	Sample Time:	Processing End	Sample Process Time: 1050	sing Start	Sample Proce Time: //47	essing End
Number of Filters Used: 9	_		Number of Filter	rs Used: 7	1	
milliliters (mL):	-120		Est. total volume DI used to remobi stormwater solids milliliters (mL):	ilize adhered within bottle	in 100 pc	
Tare Weight [empty jar in grams (g		, ,	Tare Weight [jar a	and filtered se	ed. from Bottle1 in gr	ams (g)]143,59
Dewatered/Filtered Sed. Weight (g			Dewatered/Filtere	ed Sed. Weig	ht (g): 11.7	
Sample Processing Notes/Comments: Filtered wet sediment was predommently fire silts and sands w/some medium and coarse sand. No porticular odor or sheen. Sediment was dark brownincetor. Filtrate was cheer /slightly yellow brownincetor. Filtrate was cheer /slightly yellow						
Visual Description of Final Composite Sample: Dark brown, no sheen or oder. Mostly fin silts trands while some medium to course causes						
COC Time (time composite jar i capped): リルフ	s Tota	al Dewatered/Filtered S ns (g): 2013 g	맛이 앉아봐요. 한 방법에서 작품을 가고	Sample J	ars Collected (num $H_0^2 \sim 20$	nber, size, full or
Sample ID: FO 080765 Duplicate sample collected? YO DUPLICATE ID						
Duplicate Sample ID on COC: affix FO number sticker		Any deviati Describe:	ons from standar	d operating	procedures? Y/Ø	

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DAILY FIELD REPORT

of Page ___ Project _ Portland Harbor Stormwater Samp Project No. 1020.005 Date <u>6/9/08</u> Location WPUL Field Lab 153A-STZ Subject BASIN 53A Sed Trap processing By ACB 1-5 Mm 0913: Started Filtration process. Primed Filterry UPDI. Took photo of seed hap bottle # 1 adjacent to dry evase board. 0917 : First filter became clogged. Fine particles in pore spaces of 1-5 yun filter. Altempted to scrapesolids from filter. No solids recovered. Removed Filter and saved it on clean foil. Replaced Filter, primedul UPDI, resound Altering. 0923. Second filler clogged. Five particles in pive spaces of 1-5 un filler. Altempted to scrape solids from filler. No solids recovered. femored Pilker and saved it on clean foil. Replaced Filter, primed w/uppi, resumed Altering Third filter clogged. Fine and some medium to coarse grand 0929 solids on Filter. Took photo. Recovered a very small amount of wet sediment by scraping filter v/ 55 spatula. Reptace Placed sed. in 402 amber for Deplaced Filter and resumed filtering Fourth Alter cloggel. Solids on Filter. Nearing and of soughe in B.L. 0436 Took photo. Recovered swall ausuntof sediment nom Gika by scraping filter w/ SS spatala. Placed sed in 4 03 auber jarand placed jue in chillred cooler. Feplaced Pilter and resumed filkning Fifth filler clagged. Solids on filter. Hearing Took phote. Recovered 0946 an increasing amount of sediment from filter using a 55 spatula. Placed sed in 40% owner jar; placed jar in chilled cooler. Applaced filter and resumed filting Attachments

<u>2</u> of _ Page ___ Project fortland Harbor Stormwater Samp Project No. 1020. 005 Date 6/9/08 Location WPUL Field Lab/53A_STZ subject Basin 53A Sed Trap frouessing By _ LCB 1005 Sixth Filter clogged. Solids on Gilter. Tookphoto. Recovered sediment from filler using a SS spatule Placed sedin 403 and or, placed jor in chilled cooler. Replaced filter and resuming filtering Seventh filter clogged. Last of storm water in bottle 1 filtered. Lecovered sediment from filter using a SS spatula Placed sed in 403 INIZ amber placed jar in chilled cooler 1018 Added 100 mL of UPDI to BI to removed residual seds in bottle. Copped and swirted bottle and powed into filler apparatus, Etatlethe Respect the filler apparatus, Etatlethe Respect filler filler some fine and course sediments on filler. Swaped filler will ss spatula and placed in 403 jar. 1029 Poured vernaining sugernation hito filter apparatus. Added additional 20 mL of UPDI to rinse conical alter. Ninth Alteredogged Last of sample Altered. Took photo Scraped Alter and placed in 403 jar; placed jon in chilled cooler: 1036: Weighed for. 8.49 F Attachments

DAILY FIELD REPORT

of _ Page ____ Portland Harbor Stormwater Samp Project No. 1020.005 Project Location WPCL Field Lab / 53A-ST2 Date 6/9/08 By POB subject Basin 53A Sed Trap Processing 1050: Started Fillering St #UB 5314-STZ-BZ. Took photo of BZ afjacent to dryerase board. Used 1-5 un puelatative PZ cellulose filter First filler clogged. Filtrate is clegged PUB clear w/no oder. Took photo of filter. Attempted to scrape filter, no recovery. Jemoved filter and replaced w/ new Alter. 1054 Second filler clagged. Took photo. Scraped filler w/ 55 spatula and recovered a very small amount of sediment and placed into 402 amber jar, femored filter and replaced w/ new filter 1106 and resumed Alterin Third Filter dagged - Toole photo _ Scraped Filter upss spatula and recovered a small amount of sediment and placed into 403 ПіЧ amber jar. Fourth filker clogged. There photo. Scraped filker w 55 spatula and recovered more sediment them last fime. Placed sediment 1020 in 403 autor jar Replaced Alter and reserved. 5th filter clogged. Took photo. Scrapped Riller w/ss spatialed and recovered more sediment them last time. Placed sediment 1027 in 4 og amber jour. Jeplaced Alter and resurred. 6th Giter cloggel. Tooleghoto Scraped Giter v/55 Spatiala Recovered Fair amount of sediment . Placed sediment in 403 ander 124 Attachments

óf _ Page _ Project Portland Harbor Stormwater Samp. Project No. 1020,005 Location WPCL Field Lab 153A-ST2 Date 6/9/08 By RCB Subject BASEN SBA Sed Trap Processing 1043. Added 100 ml UPDI to B2 to remove residual seds from bottle Capped and survived bottle and pouved into filter apparatus. Used ~ 20 mL UPD1 for inse residual seds from conical hund. Scienth Alter degged. Teek Photo. Scraped Filter and and placed into Hoz jar. Weighed pr: = 11.9 g of filtered wet sediment 53A-STZ-B2 complete. Composided filtered sediment in fac 1147 Capped jour & placed into stagging Fridge. Attachments

	· · · · · · · · · · · · · · · · · · ·	and the second second second second second second second second second second second second second second second	1		
	ENVIRONMEN Water Pollution C 6543 N. Bu	PORTLAND TAL SER Confrol Laboratory rilington Ave 197203-5452	VICES		
INLINE SE	DIMENT TRAP SAMP	LE PROCE	SSING D	ATA SHEET	
Project Name: PORTLAND HA	ARBOR STORMWATER SAMP		Project Nun	nber: 1020.005	
Sample Processing Conducted	By: Sample Pt. Code: 53A_ST3	Removal Date:Processing Date: $5/6/08$ $6/9/08$ 74Subbasin: N/A			
Basin: 53A	Hansen ID: AAA I	79	Subbasin:	in: NA	
Sediment Trap Location Descr	iption/Address: N. Rivevga approx. 0.7	te ‡ N Ramsu 5'-1.5' East	ey Bivd. of AAAi	Sed traps located 79 in 24" inlet	
	SEDIMENT TRAP PROC	ESSING/FILTF		OTES	
Filter Equipment/Method:		nm) stainless steel 1 Operating Procedu	ilter support w re (SOP) 5.01	//conical glass microfiltration system b & Evaluation of Microfiltration	
Filter brand, grade, porosity in	micrometers (µm) and material			e P2, 1-5 μm cellulose filter paper):	
Sediment Trap Bottle ID: 5	3A-ST3-B -	Sediment Trap	Bottle ID:	<u> 534-513-82-</u>	
Total Est. Depth of Accumulate	ed Sed in Bottle (inches): $\mathcal{O}_{\mathcal{X}}\mathcal{Z}^{\mathcal{U}}$	Total Est. Depth	n of Accumul	ated Sed in Bottle (inches): 03	
Sample Processing Start Time: 1325	Sample Process Time: 1415	sing Start	Sample Processing End Time: 1447-		
Number of Filters Used: 3		Number of Filte	rs Used: 5		
Est. total volume of Ultra Pure DI used to remobilize adhered stormwater solids within bottle in milliliters (mL): Est. total volume of Ultra Pure DI used to remobilize adhered stormwater solids within bottle in milliliters (mL):				$n \sim 200 \text{mL}$	
Tare Weight [empty jar in grams (g	Tare Weight [jar and filtered sed. from Bottle1 in grams (g)]: [34.5				
Dewatered/Filtered Sed. Weight (g): 5,9 g Dewatered/Filtered Sed. Weight (g): 6.9 g					
Sample Processing Notes/Comments: Seds primarily Sample Processing Notes/Comments: Seds primarily Sample Proceeding Sediment is dark brown in color. Sediment is dark brown in color.			sing Notes/C lts & saud ncd partic Scarmen	comments: Seds primarily s w ~ 10% medium to cles. Filtrate is clear t is dark Brown in	
Visual Description of Final Con	nposite Sample: Dark brow	m, no sheen	, or odor	Mostlysilt, fine saud	
COC Time (time composite jar capped): 1/154	is Total Dewatered/Filtered S grams (g): 17. & a	ed. Weight in	Sample Ja	rs Collected (number, size, full or	

 capped):
 //454
 grams (g):
 //2.8 g
 partial):
 //ar 15% full

 Sample ID:
 FO 080766
 Duplicate sample collected?
 V/Ø
 DUPLICATE ID

 affix FO number sticker
 Any deviations from standard operating procedures?
 Y/Ø

 affix FO number sticker
 Describe:

S:\FIELDOPS\FORMS\Inline Sed Trap Sample Processing FDS.doc

of Page Project Portland Harbor Stormwater Samp Project No. 1020.005 Location WPCL Field Lab / 53.4_ 5T3 Date 6/9/08 subject Basin 63A Sed Trap Processing By RUB /DJH All fimes PST 1325 Started processing 53A-ST3_BI by photographing BI adjacent to dry evase board. 1327 Assembled Filter appartus using fresh, decontaminated equipment used a 1-5 un qualitative cellulose filter. Primed Filter w/ UPDI. 1335 Began Filtering sample. Filtrate is clear w/ no odor Filter 1 clogged, scraped sediment into labeled, weighed 403 amber jour Removed Filter, replaced w/ clean filter and resumed Filtering Second filter clogged. Scraped sediment from filter and placed into 2 4 03 amber jar. Removed filter and DJH began assisting at this point. DJH replaced filter. 100 mL UPDI 1401 used to remove residual sediment from BI Third Filter clogged. Scraped sediment from filter and 1409. placed into 403 far. Bl sediment filtration complete. Weighed jar wet sediment/weight = 5.9 g Began processing 53A_ST3_B2 by photographing bottle adjacent to dry erase board. 1415 started filtering BZ. Filtrate is clear wi no distinct odor. 1419. Filker 1 clogged @ 1426. Filler is full of very fine silts. Alterryted to scrape sediment from filter using 55 spatula. Very very little recovery. Seds placed in 403 unber jor Attachments



of Page _ Project Portland Harbor Stormwaker Samp Project No. 1020.005 Date 6/9/08 Location WPCL Field Lab 153A_5T3 By RUB/DJH subject Basin 53A Sed Trap Processing 1429. Second Filterebogged. Sediment scraped from Filter and placed into 402 jun. 1436 Added Woul of UPDI to remove residual seds from BZ. Filter 3 clogged, sedments scraped into 402 jav. Added an additional 100 mL of UPDI to remove the vest of residual seds from B2. Filtered seds, scraped into 4 03 M47 jar. B2 sed. Fitration complete. Weight for > wet-sed ment weight= 6.90 Tholos Composited sample in 4 03 jar and weighted sample Total sediment [wf. = 12.8 g] 1451 Sampling completed, photo taken of sediment in jor 1454 Attachments

ţ 5

	in Completed COC /EV 2007 08) vie		Compl.		200	5375	Judland	mnlinn	tent Tran Ca	2008 Sedin	HOWER SUUS	Samn\Samn	S/IF/I/100/1020 005 - Portland Harbor Stormwater Samn/SamndodEV 2007 2008 Sediment Tran Samnling/Dottland Harbor OE Sod Tra	S-1FID(1000)1020 005
Printed Name: Date:	Date:				Printed Name:	Printe		a	Date:			Printed Name:	Date: P	Printed Name:
Signature: Time:	Time:				ure:	Signature:		74	Time:			Signature:	Time:	Signature:
Received By: 4.			μ	Y:	Received By:	Rece					2	Received By:	1	Received By: 1.
Printed Name: Date:	Date:				Printed Name:	Printe		12	Date:			Printed Name:	80/1/9	Henewiah Bawden
Signature: Time:	Time:				ure:	Signature:			Time:			Signature:		Statiline:
Relinguished By: 4.			3.	Relinquished By:	quish	Reli					<u>By:</u> 2.	Relinguished By:		Relinguished By: 1.
												1 B .		
134.5 g Total Wet Weight		ļ				•			0	1438	6/3/08	53A_ST5	ST-53A-AAA170-0608 N RAMSEY BLVD/SIMPLOT	FO 080768
63.6 g Total Wet Weight						•			n	1143	6/5/08	53A_ST4 6/5/08	ST-53A-AAA179-0608-S N RIVERGATE & RAMSEY	FO 080767
12.8 g Total Wet Weight						•			c	1454	80/6/9	53A_ST3	ST-53A-AAA179-0608-E N RIVERGATE & RAMSEY	FO 080766
20.3 g Total Wet Weight						•			C	1147	80/6/9	53A_ST2	ST-53A-AAA179-0608-N N RIVERGATE & RAMSEY	FO 080765
50.6 g Total Wet Weight	·					•			c	1052	6/5/08	53A_ST1	ST-53A-AAA171-0608 9891 N RAMSEY BLVD	FO 080764
			Herbicio Total Me	· · · ·	Organo	TS*	PCB Are	PCB Co	Sample Type	Sample Time	Sample Date	Point Code	Location	WPCL Sample I.D.
		Mn, Ni, Ag, Zn) + Hg	ies etals (Al, Sb, As, Cd C	hthalates (Low-level)	chlorine Pesticides		oclors	ngeners (All 209)	stain sample)ssible to r	: 5/6/08 ost aliquot po is.	ent Traps 07; removed: se the smalle w-up analyse	Outfall 53A Sediment Traps Sediment traps installed: 10/15/07; removed: 5/6/08 VPCL, care should be taken to use the smallest alique volume for additional follow-up analyses.	Outfall 53A Sediment Traps Sediment traps installed: 10/15/07; removed: 5/6/08 *Total Solids to be done at WPCL, care should be taken to use the smallest aliquot possible to retain sample volume for additional follow-up analyses.
Comments		Metals	┢		al	General								-
alyses	Requested Analyses	Re							T	SEDIMENT	Matrix:	2		File Number: 1020.005
										סי	ER SAM	DRMWAT	AND HARBOR STO	Project Name: PORTLAND HARBOR STORMWATER SAMP
Collected By: JXK			693		Ital			2 T						Portland, Oregon 97203-4552 (503) 823-5696
Page: <u>1</u> of <u>1</u>			Vinee	Š	s s	Ó L	Viro F	Chain-of-Custody	Chain-of-Custody	NOR			boratory	Water Pollution Control Laboratory 6543 N. Burlington Ave.
Date: 6/11/08				C.	ŝ	or	0, T	City of Portland	0			See.	(

Date: 6/11/08

2010 Inline Solids Grab Sampling

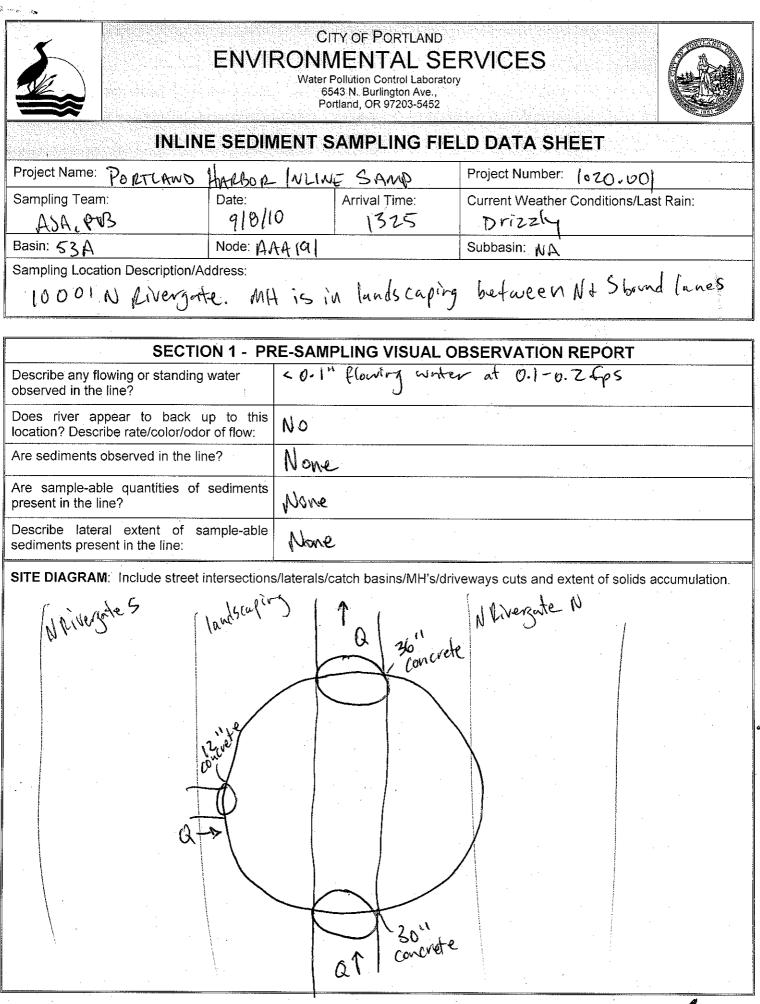
	Printed Name:	Signature:	ete	Similar March	Relinquished By: 1.								FO105880	WPCL Sample I.D.		-		Project Name: PORTI File Number: 1020.001	543 N. Burlington Ave. Portland, Oregon 97203-4552 (503) 823-5696
	Date:	Time:	Brant 01/0/10	2015 1000 (055									IL-53A-AMS913-0910 10001 N RIVERGATE	Location		Basin 53A Inline		PORTLAND HARBOR INLINE SAMP 020.001 Mat	552
	Printed Name:	Keceived by: Signature:	Printed Name:	signature:	Relinquished By:								53A_7	Point Code		line	4	LINE S	C17
		<u>v:</u> 2.			hed By: 2.	· ·			, ,				9/8/10	Sample Date				AMP Matrix	
											· .	· · ·	1445	 Sample Time 				SEDIMENT	
	Date:	Time:	Date:	time:	٤.,	:							. 0.	s Sample Type				=	Bureau
	14	ie.											•	PCB Aro	clors - LL ngeners (All 20		- 9	<u> </u>	Bureau of Environmental Services
	Printed Name:	Keceived By: Signature:	Printed Name:	Signature:	Relinguished By:												Organics		nmental S
		<u>.</u> 3			ed <u>By:</u> 3.	· · · · · · · · · · · · · · · · · · ·		· ·			· · · · · · · · · · · · · · · · · · ·		•	Total So	ldis		General		Services
													•		tals (As, Cd, C /in, Hg, Ni, Ag,	r Zn)	Metals	Requ	
	Date:	Time	Date:	Time:			-											ested A	M.
	Printed Name:	Received By: Signature:		Signature:	Relinguished By:													Requested Analyses	Q
, ,		4. T			4.												Field Comments		Collected By: AJA
, and a second	Date:	Time:	Date:	Time:										· .	•				A PTB

City of Portland Environmental Services

DAILY FIELD REPORT

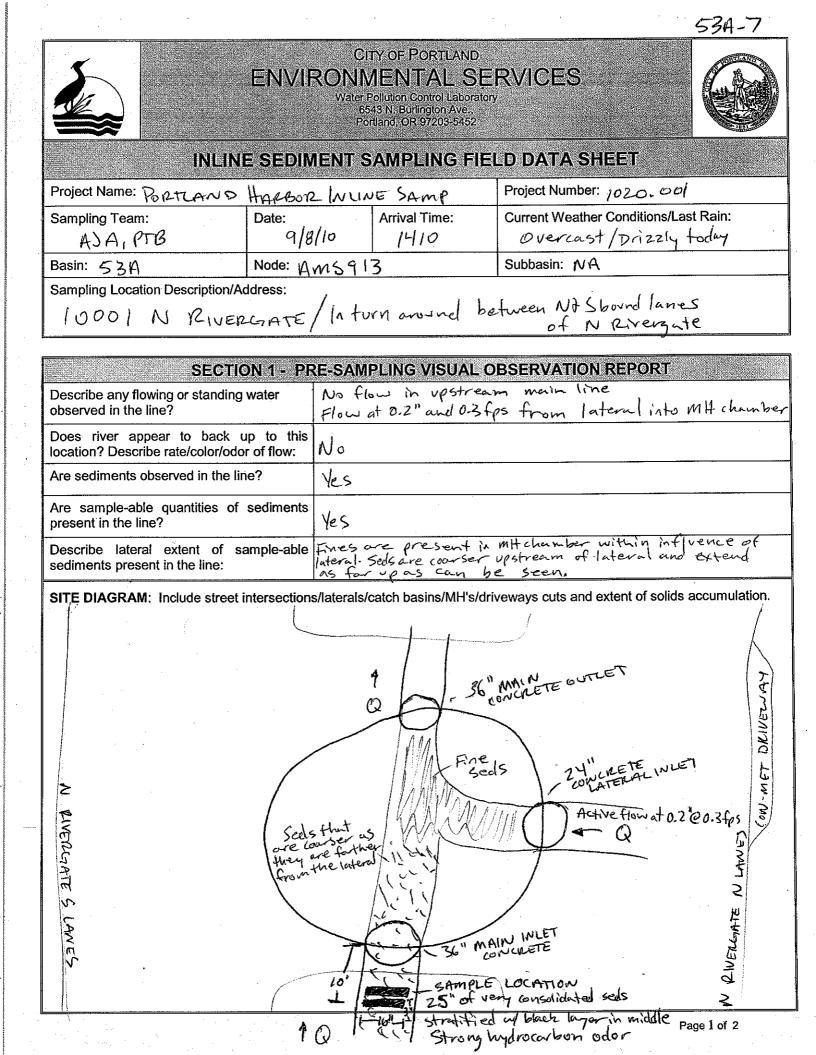


	Page of
Project PORTLAND HARBOR INLINE SAMP Location BASIN 53A	Project No. $1020 \cdot 001$
Location DASIN JJA Subject Inline Sampling	Date <u>9/8/10</u> By <u>AJA, PT B</u>
1325 Arrive on-site AAA191 set op TC. E available/prosent in pipe. Will check the alte	intrant relays no seels ernate location.
1410 Could not locate alternate MH AAA18 covered aver in landscapping. Will require locate. AMS913 is visible in road and	ea metil detector to
MH from AAA188. This MH hasalange-1 the E (May be Connet lateral?) There is ac	ateral coming in from breflow now, although it
is not correctly mining. No flow in main lin Seds are present in mit chamber and in line of lateral there are abundant fines. Up stream	In correct influence in of lateral are course
seds (finest govels) that extend as tor as car appear to get conser as you true upline. Mai	n infect is 30 "concrete.
1430 Spoke with Linda Scheffler. leceived go-ah upstream main line. to a from to Every eff go as for up as possible to avoid influence -1 MH sampled is AMS913.	ort will be made to from the lateral.
1445 Collected sample. Homogenized. Filled jars.	Gove point code 53A-7
Attachments	



Page 1 of 2 NO SAMPLE COLLECTED

. . .

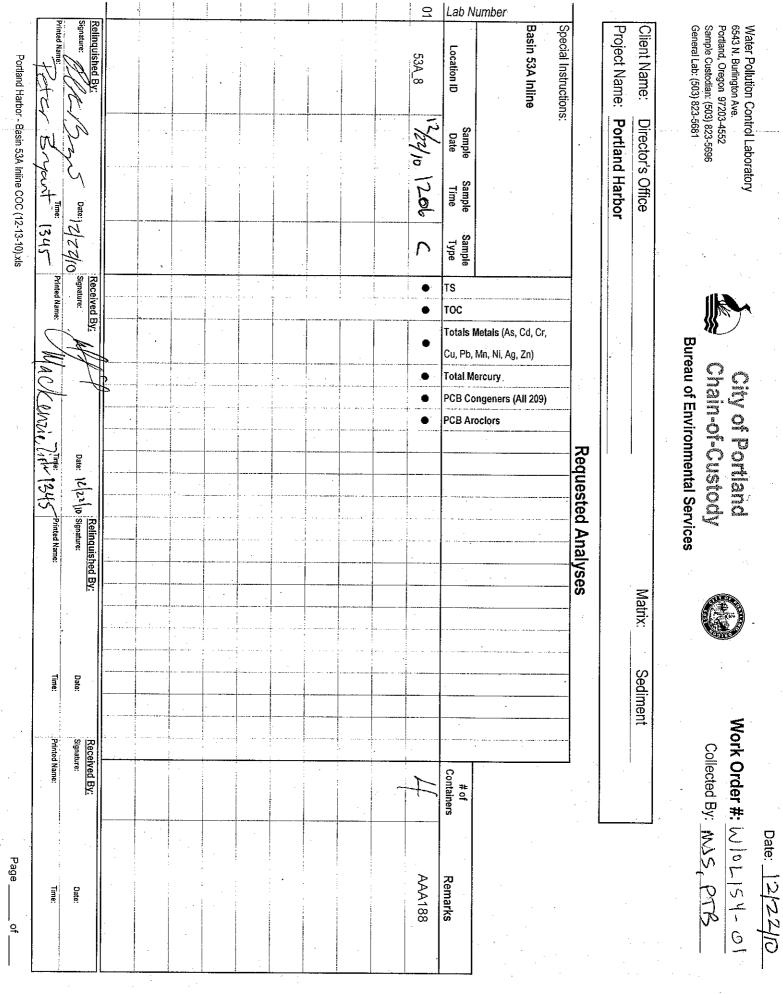


Date: 9/8/10	SEC	FION 2 - SAMF	PLE COLLECTION	REPORT	Node: AMS913
Sampling Equipment:		AStainless steel sp □ Other (Describe)	oon & stainless steel bucket		
Equipment Decontami	nation process:	▲Per SOP7.01a □ Other (Describe)			
Sample date: S	ample time: I445		cation: (IL-XX-NNNNN SA - AMS913 -		
Sample location descri 10 feet us	ption: (number of fe	eet from node of e ຈັ້ງ ຊາວຊຣ ເທີ	ntry) f He of spoon acros	s pipe inv	ert.
Sample collection tech	•	Per SOP 5	•	1 1	
Describe Color of samp	ble:	Dark grey			
Describe Texture/Partic	ele size:	70% sand	15% fines 15%	fine grave	λ
Describe visual or olfac bulk sediment sample (ntamination in oration, etc.):	15% fires 15% Hydrocarbon od Sheen (strenby) o	sr surface	
Describe depth of solid	s in area where sar		2.5" deep		
Describe amount and ty	/pe of debris in san	nple:	None		,
Amount and type of del	oris removed from f	inal sample:	None		
Compositing notes:	to mogenized i	n bucket			
Sample Jars Collected	(number, size, full o	or partial)? 5	SIL 4 oz. jars		
If not enough sample to collected and related ar analyte priority list in wo	alytes sampled (as				
	2000				
FO105			e sample collected? Y	N) Dupe ID	

U

SECTION 3	- PHOTOGRAPH LOG
Overview of node showing drainage area	82
Plan view of sediments inline	76
Homogenized sample (sediment in bowl)	81,79,80,78,77
Other?	74875 of AAA191 upt down

534-7



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City of Portland Environmental Services

DAILY FIELD REPORT



Page Project KORTZAND HARBOR Project No. Location BASIN S3A Date 12/22/13 subject Inline Sed Samp By MJS, PTB 1140 Arrive on-site AAA188 since it's been uncovered to collect an inline sediment sample. There is a trace amount of sediment downstream manhole chamber. as In manhole chamber there is ~ 3/1" of sectionent consisting of a mix of course gravel with in firer material extending as far as usule us stoream veing in anhold - appearing to be finer further upstream, to trace and wishe. of fine serlinenst Collected Sample Frann an arta 175 49 404 today at many have 30 love RAMON : R wide reduced more 1.5 deer and writer dent To Sample had a hard sufface whome suffer VA24 5 1 infiltration material, Distingt spot of upstream of manhold No laterals entering the main line. 1235 - off xit-Attachments

	TY OF PORTLAND IENTAL SEI Pollution Control Laboratory 543 N. Burlington Ave. ritland, OR 97203-5452	RVICES	
INLINE SEDIMENT S	AMPLING FIEL	D DATA SHEET	
Project Name: Portland Harbor	,	Sample ID:	102154-01
Sampling Team: Date: MJS,FTB 12/22/10	Arrival Time:	Point Code: $53A - 8$	· · ·
Basin: 53A Node: AAA	188	Address: 10001	N. Riversote
Current weather: light dr22/e. 4	D c		
Date and time of last known rainfall: + race over	the last oil i	· 6419	
SECTION 1 - PRE-SAM		SERVATION REPOR	2Т
~	\sim	Depth of water = 1.5 in F	
Does river back up to this location? Yes or (No) If river is ba	· · · · · · · · · · · · · · · · · · ·	□ Brown □ Grey Water Odo □ Clear	□ Hydrocarbon
Are sediments observed in the line? Yes or No Are	recoverable quantities of	sediments present in the line	
f sediments present: Avg Depth of seds = $\frac{3/4}{1000}$ ir	· · · · · · · · · · · · · · · · · · ·	<u> </u>	
<u>i</u>	PDS	ptB ⁿ	· //
	30in.		
SITE DIAGRAM: Include street intersections/main line and extent of solids accumulation as well as subsample	es/laterals/catch basin e locations.	s/MH's/pipe sizes/ flow dire	ection/ driveways cuts
		-	MY ALCON TO CALL THE REAL PROPERTY OF THE
	· · · · · · · · · · · · · · · · · · ·	a mana ana ana ana ana ana ana ana ana a	
A A	1. Rivergate	N. bound	
Contraction of the second of t		AREA GWX 301 × 1.5 %	for deposit
۸/ c	1979 - Carl Carl State (1979 - 1974 - 1974 - 1974 - 1974 - 1974 - 1974 - 1974 - 1974 - 1974 - 1974 - 1974 - 197		
	ivergate S	bound >	
			5 - 43.5
		and a second second second second second second second second second second second second second second second	

Date: 13/37/10	SECT	ION 2 - SAMI	PLE COL	LECTION REF	PORT	Node: No.4188	Point Code:
Sampling Equipment: 🖬 Sta	ainless steel u	utensil & stainles	s steel rece	ptacle □ Other	(Describe)	tone tollo	
Equipment Decontamination p	process: 🕞	Per SOP7.01a	d Deviat	ions (Describe)	methan	el for org	. solvents
Sample date: Sample 12/23/10 12			- AAA	(IL-XX-NNNNN 188 - 1210	. · · ·		
Sample location: □ From M	1H chamber	From line	If from	ine, segment is F	rom Node	AAA 188 To N	171
Sample collection technique:	Per SOP5	5.01 e Dev	iations (des	cribe below)		•.	pre 12/27/0
Visual and olfactory observa				Color of samp	d Brow le □ Grey d Othe		some conse White conse
Sample composition/partic distribution (estimated perce	cle size S entages): D	lilt/Clay S ecomposed Org	and <u>95</u>	Fine Gravel _ Other (describe		Gravel <u>5</u>	Debris
If present, type of debris in s	sample C	Metal 👘 🗆 P	arge rocks lastic aper	Removed debris	? I Yes (Type & Amo s	ount) □ No —
Compositing notes	SOP5.01	Deviations (de	escribe)				
Sample Jars Collected (num			-402	full			
If not enough sample to fill all	of the jars, lis	st jars Ja	r Size	Amount Full		Target Ana	alyses
collected and related analytes	sampled (as		HOZMA	Enll may			
analyte priority list in work ord	er).		4/62	F2(/			
W10L154-01		·	4 12	Fall			
Portland Harbor			402	f.N			
53A_8 Sampled: 12/22/10 12:06 Field Data Sheet		Duplic		collected? Y/	<u> </u>		
Duplicate sample identification	on # on COC:	NA C	Here				
	· · ·						<u></u>

SECTION 3	- PHOTOGRAPH LOG
Overview of node showing drainage area	Filename(s): 53A-8 AAAB Draihoge Aren Overview 122210
Plan view of sediments inline	Filename: " I Plun view of seliments inline " (xz)
Homogenized sample (sediment in bowl)	Filename: 534-8 HAMISS Humogenized sample 12221021F
Other?	Filename(s): 53 A-8 HAA188 Seds showing hand surface 1222

Attachment C-3 Laboratory Reports and Data Review Memoranda

(on CD only)



55 SW Yamhill Street, Suite 400 Portland, OR 97204 P: 503.239.8799 F: 503.239.8940 info@gsiwatersolutions.com www.gsiwatersolutions.com

Laboratory Data QA/QC Review Inline Solids Investigation City Outfall Basin 53A

To:FileFrom:Andrew Davidson, GSI Water Solutions, Inc. (GSI)Date:March 3, 2010

This memorandum presents a quality assurance/quality control (QA/QC) review of the laboratory data generated from source control sampling and analyses conducted by the City of Portland (City) in June 2008. Five sediment trap samples were collected in City Outfall Basin 53A between June 3, 2008 and June 9, 2008 and submitted for analyses.

The laboratory analyses for these source control program samples were completed by the City's Bureau of Environmental Services (BES) Water Pollution Control Laboratory (WPCL) and subcontracted laboratories. The following laboratories conducted the analyses listed:

- BES WPCL
 - o Total Solids SM 2540G
 - o Metals EPA 6020
- Test America (TA)
 - Total Organic Carbon (TOC) EPA 9060 MOD
- Pace Analytical Services (Pace)
 - Polychlorinated Biphenyls (PCBs) as Congeners EPA 1668A

The WPCL summary report and the subcontracted laboratories' reports for all analyses associated with this sampling event are attached. The WPCL summary report comments that unless otherwise noted, all analytical QA/QC criteria were met for these samples including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. No exceptions were noted in the WPCL report.

The following QA/QC review is based on the available documentation provided by the subcontracted laboratories. The QA/QC review of the analytical data consisted of reviewing the following elements for each laboratory report, if applicable and/or available:

- Chain-of-custody for completeness and continuous custody
- Analysis conducted within holding times
- Chemicals of interest detected in method blanks
- Internal standard recoveries within accuracy control limits
- Matrix spike and matrix spike duplicate (MS/MSD) sample results within laboratory control limits
- Laboratory control and duplicate laboratory control (LC/DLC) sample recoveries within laboratory control limits

The results of the QA/QC review of the subcontracted laboratory reports are presented below.

Chain-of-Custody

The chain-of-custody forms showed continuous custody of the samples. The chain-of-custody procedures appear to have been adequate indicating that sample integrity was maintained throughout the sample collection and delivery process.

Analysis Holding Times

The samples were extracted and analyzed within the recommended method-specific holding times.

Method Blanks

Method blanks were processed during the subcontracted laboratory analyses of TOC and PCB congeners. Several PCB congeners were detected in the method blank during the PCB analysis. Field samples FO080764, FO080765, and FO080766 contained one or more of the congeners that were detected in the method blank. These sample results are flagged with a "B" in the Pace report if the detected concentration is less than 10 times the method blank concentration. These qualified results therefore should be considered biased high or possibly false positives. The total PCB congener value should be considered biased only slightly high. There is no reported detection of TOC in the associated method blank.

Internal Standard Recoveries

Isotopically-labeled internal standard recoveries were processed during the laboratory analysis of PCB congeners. Internal standard recoveries were within control limits with twenty-six exceptions, which are flagged "P" in the subcontracted laboratory report. Affected congeners are qualified with an "EST" flag.

Interfering matrix components impacted the recoveries of several isotopically-labeled internal standards for field sample FO080768. These values are flagged "I" in the subcontracted report to indicate that incorrect isotope ratios were obtained. Affected congeners are qualified with an "EST" flag.

Total homolog and total PCB concentrations that include one or more estimated congener value(s) are considered biased slightly high.

Matrix Spike/Matrix Spike Duplicate

MS/MSD samples were prepared from aliquots of field sample FO080768 and processed during the laboratory analysis of PCB congeners. With the exception of isotopically-labeled PCB congeners 1, 3, 4, 188, and 202, labeled analyte recoveries were within laboratory control limits. Recoveries for the spiked native analytes appear to have been impacted by high background levels of PCB congeners in the matrix. Pace reports that reasonable recovery and relative percent difference values were obtained for analytes not impacted by elevated sample levels.

Laboratory Control/ Duplicate Laboratory Control Samples

LC samples were processed during the laboratory analyses of PCB congeners and TOC. With the exception of isotopically-labeled PCB congener 188, all spiked analyte recoveries were within acceptance limits for the LC sample processed during the PCB congener analysis. LC sample recoveries were within laboratory control limits for TOC analysis.

Other

Due to interfering matrix components, sample FO080767 was analyzed at a dilution.

	2007-08).xls	Trap Completed COC (FY 2007-08).xls	Trap Comp	r OF Sed	d Harbo	Portlan	ampling	ediment Trap Sa	Y 2007_2008 S	Sampdoc\F	tter Samp	StEID(1000)1020.005 - Portland Harbor Stomwater Samp(Sampdoc)FY 2007_2008 Sediment Trap Sampling/Portland Harbor OF Sed	S;\EID\1000\1020.005
Printed Name: Date:	Date: P			Printed Name:	Printe			Date:		ne 	Printed Name:	ch 61/1/08	rinted Name: ROVIQ K/V.C
New Given Dy. 4. Signature: Time:	Time:		ç	Signature:	Signature:		W	Time			Signature:	TIME 8/9	gnature: Muller
				silved Bu-					2	A Rv	Received Ru-	80/11/08	Jeremiah Bauden
	nate.			Printed Name:	Printe		*	Date:			Printed Name:		rinted Name:
Nenniquismeu DY: 4. Signature: Time:	Time:		ب <u>رہ</u> بر	Paller	Signature:		iń.	Time:	!		Signature:	Time:	Sentence:
JalinArrishad Bur A			Ry:	Relingitished	Reir				2	Relinquished By:	Relinou		Relinquished By: 1.
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										10 m + 1 + 1 + 1	······		
										anali si ²⁰⁰ anaj Majan di Sanaj			
الالالى £47,5134.5 g Total Wet Weight	1/5.1.1. 4;	×			× •		×	ж С	6/3/08 1438	Constanting The second	53A_ST5	ST-53A-AAA170-0608 N RAMSEY BLVD/SIMPLOT	FO 080768
$q_{acl}/s_z = 4q, q$ 63.6 g Total Wet Weight	25 into =40				× •		×	ಸ ೧	6/5/08 1143		53A_ST4	ST-53A-AAA179-0608-S N RIVERGATE & RAMSEY	FO 080767
$0/S_0$ J_{3} J_{4} g 12.8 g Total Wet Weight	% Solids 5				× •		\mathbf{x}	9 <u>7</u> 0	6/9/08 1454	en distantes de	53A_ST3	ST-53A-AAA179-0608-E N RIVERGATE & RAMSEY	FO 080766
$\frac{b}{b} \int_{10} \int_{10} \frac{1}{2} \frac{H}{3} \int_{10} \frac{1}{20.3}$ g Total Wet Weight	0/5/ichs=4				• X		X	47 C	6/9/08 1147	-10-11 V.	53A_ST2	ST-53A-AAA179-0608-N N RIVERGATE & RAMSEY	FO 080765
, m g 50.6 g Total Wet Weight	96 Jals=71.8	×			× •		×	52 C	6/5/08 1052		53A_ST1	ST-53A-AAA171-0608 9891 N RAMSEY BLVD	FO 080764
o 0]2	Are TPHA GIRIO		Herbi		TOC TS*	PCB					Code	Location	WPCL Sample I.D.
	hilles ad		icide			Aroc		iple Sample	Sample Sample		Point		
		n, Ni, Ag, Zi	inalates (L s als (Al, So,	hiorine Pes	<u> </u>	lors	ह geners (All	to retain samp	iquot possible	smallest al nalyses.	o use the llow-up a	L, care should be taken to use the smallest volume for additional follow-up analyses.	* Total Solids to be done at WPCL, care should be taken to use the smallest aliquot possible to retain sample volume for additional follow-up analyses.
					·	•	209)		Ď	apo		Cadimont trans installed: 10/15/07: ramouad: 5/6/08	
Comments		Metals			General		╈			300	mont T	Outfall 53A Sadimant Trans	
	Requested Analyses	Rec					╈	SEDIMENT		Matrix:	i		File Number: 1020.005
-		I							SAMP	WATER	TORM	PORTLAND HARBOR STORMWATER SAMP	Project Name: PORT
Collected By: <u> </u>			·										Portland, Oregon 97203-4552 (503) 823-5696
	\mathcal{I}		Chain-of-Custody au of Environmental Services	IStoc			e 🔤	Chain-of-Custor Bureau of Environmental Si				aboratory	Water Pollution Control Laboratory 6543 N. Burlington Ave.
Date: 6/11/08		•	0	City of Portland	D O	Q,	interest in the second s		LAND SH	THOMAS A			. :



LABORATORY ANALYSIS REPORT



Sample ID: FO08	0764	Sample Collected: 06/05/08 10:52 Sample Received: 06/11/08	Sample Status:	COMPLETE AND VALIDATED
Proj./Company Name: Address/Location:		ND HARBOR STORMWATER SAMP	Report Page:	Page 1 of 1
		MSEY BLVD -NEAR ENTRANCE TO OSM	System ID:	AM05574
Sample Point Code: Sample Type: Sample Matrix:	53A_ST1 COMPOSI SEDIMENT		EID File # : LocCode: Collected By:	1020.005 PORTHASW JXB

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	71.8	% W/W	0.01	SM 2540 G	06/11/08
METALS					
ARSENIC	3.83	mg/Kg dry wt	0.50	EPA 6020	06/18/08
CADMIUM	0.67	mg/Kg dry wt	0.10	EPA 6020	06/18/08
CHROMIUM	269	mg/Kg dry wt	0.50	EPA 6020	06/18/08
COPPER	82.5	mg/Kg dry wt	0.25	EPA 6020	06/18/08
LEAD	39.1	mg/Kg dry wt	0.10	EPA 6020	06/18/08
MANGANESE	2540	mg/Kg dry wt	1.0	EPA 6020	06/18/08
MERCURY	0.068	mg/Kg dry wt	0.010	EPA 6020	06/18/08
NICKEL	63.5	mg/Kg dry wt	0.25	EPA 6020	06/18/08
SILVER	0.14	mg/Kg dry wt	0.10	EPA 6020	06/18/08
ZINC	963	mg/Kg dry wt	0.50	EPA 6020	06/18/08
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	14100	mg/Kg dry wt	100	EPA 9060 MOD	06/24/08
POLYCHLORINATED BIPHENYL CONGENE	RS -PACE			1	
Refer to Contract Report	Completed	ng/Kg dry wt	•	EPA 1668 MOD	06/30/08





LABORATORY ANALYSIS REPORT



Sample ID: FO08	Sample Collected: 06/09/08 11 Sample Received: 06/11/08	:47 Sample Status:	COMPLETE AND VALIDATED
Proj./Company Name: Address/Location:	PORTLAND HARBOR STORMWATER SAMP ST-53A-AAA179-0608-N	Report Page:	Page 1 of 1
Address/Location.	N RIVERGATE & RAMSEY -36IN FROM NORTH	System ID:	AM05575
Sample Point Code:	53A_ST2	EID File # :	1020.005
Sample Type: Sample Matrix:	COMPOSITE SEDIMENT	LocCode: Collected By:	PORTHASW JXB

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL TOTAL SOLIDS	43.1	% W/W	0.01	SM 2540 G	06/11/08
OUTSIDE ANALYSIS TOTAL ORGANIC CARBON	75900	mg/Kg dry wt	100	EPA 9060 MOD	06/24/08
POLYCHLORINATED BIPHENYL CON Refer to Contract Report	IGENERS -PACE Completed	ng/Kg dry wt		EPA 1668 MOD	06/30/08

End of Report for Sample ID: FO080765

Validated By:



LABORATORY ANALYSIS REPORT



Sample ID: FO08	0766 Sample Collected: 06/09/08 14: Sample Received: 06/11/08	54 Sample Status:	COMPLETE AND VALIDATED
Proj./Company Name: Address/Location:	PORTLAND HARBOR STORMWATER SAMP ST-53A-AAA179-0608-E	Report Page:	Page 1 of 1
	N RIVERGATE & RAMSEY -24IN FROM EAST	System ID:	AM05576
Sample Point Code:	53A_ST3	EID File # :	1020.005
Sample Type:	COMPOSITE	LocCode:	PORTHASW
Sample Matrix:	SEDIMENT	Collected By:	JXB

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL TOTAL SOLIDS	54.9	% W/W	0.01	SM 2540 G	06/11/08
OUTSIDE ANALYSIS TOTAL ORGANIC CARBON	98500	mg/Kg dry wt	100	EPA 9060 MOD	06/24/08
POLYCHLORINATED BIPHENYL CO Refer to Contract Report	NGENERS -PACE Completed	ng/Kg dry wt		EPA 1668 MOD	06/30/08



LABORATORY ANALYSIS REPORT



Sample ID: FO08	0767	Sample Collected: 06/05/08 11:43 Sample Received: 06/11/08	Sample Status:	COMPLETE AND VALIDATED
Proj./Company Name: Address/Location:		D HARBOR STORMWATER SAMP	Report Page:	Page 1 of 1
		ATE & RAMSEY -42IN FROM SOUTH	System ID:	AM05577
Sample Point Code: Sample Type: Sample Matrix:	53A_ST4 COMPOSIT SEDIMENT		EID File # : LocCode: Collected By:	1020.005 PORTHASW JXB

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

	-				Analysis
Test Parameter	Result	Units	MRL	Method	Date
GENERAL					
TOTAL SOLIDS	. 49.9	% W/W	0.01	SM 2540 G	06/11/08
METALS					
ARSENIC	10.8	mg/Kg dry wt	0.50	EPA 6020	06/18/08
CADMIUM	2.54	mg/Kg dry wt	0.10	EPA 6020	06/18/08
CHROMIUM	. 809	mg/Kg dry wt	0.50	EPA 6020	06/18/08
COPPER	181	mg/Kg dry wt	0.25	EPA 6020	06/18/08
LEAD	176	mg/Kg dry wt	0.10	EPA 6020	06/18/08
MANGANESE	6160	mg/Kg dry wt	1.0	EPA 6020	06/18/08
MERCURY	0.195	mg/Kg dry wt	0.010	EPA 6020	06/18/08
NICKEL	71.8	mg/Kg dry wt	0.25	EPA 6020	06/18/08
SILVER	0.55	mg/Kg dry wt	0.10	EPA 6020	06/18/08
ZINC	2130	mg/Kg dry wt	0.50	EPA 6020	06/18/08
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	126000	mg/Kg dry wt	100	EPA 9060 MOD	06/24/08
POLYCHLORINATED BIPHENYL CONC	ENERS -PACE		• •		
Refer to Contract Report	Completed	ng/Kg dry wt		EPA 1668 MOD	06/30/08



LABORATORY ANALYSIS REPORT



Sample ID: FO08	0768 Sample Collected: 06/03/08 14:3 Sample Received: 06/11/08	38 Sample Status:	COMPLETE AND VALIDATED
Proj./Company Name: Address/Location:	PORTLAND HARBOR STORMWATER SAMP ST-53A-AAA170-0608	Report Page:	Page 1 of 1
	N RIVERGATE & RAMSEY - UPSTREAM	System ID:	AM05578
Sample Point Code:	53A_ST5	EID File # :	1020.005
Sample Type: Sample Matrix:	COMPOSITE SEDIMENT	LocCode: Collected By:	PORTHASW JXB

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	47.5	% W/W	0.01	SM 2540 G	06/11/08
METALS					
ARSENIC	13.9	mg/Kg dry wt	0.50	EPA 6020	06/18/08
CADMIUM	1.73	mg/Kg dry wt	0.10	EPA 6020	06/18/08
CHROMIUM	627	mg/Kg dry wt	0.50	EPA 6020	06/18/08
COPPER	133	mg/Kg dry wt	0.25	EPA 6020	06/18/08
LEAD	107	mg/Kg dry wt	0.10	EPA 6020	06/18/08
MANGANESE	5920	mg/Kg dry wt	1.0	EPA 6020	06/18/08
MERCURY	0.158	mg/Kg dry wt	0.010	EPA 6020	06/18/08
NICKEL	61.0	mg/Kg dry wt	0.25	EPA 6020	06/18/08
SILVER	0.39	mg/Kg dry wt	0.10	EPA 6020	06/18/08
ZINC	1440	mg/Kg dry wt	0.50	EPA 6020	06/18/08
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	94600	mg/Kg dry wt	500	EPA 9060 MOD	06/24/08
POLYCHLORINATED BIPHENYL CONG	ENERS -PACE				
Refer to Contract Report	Completed	ng/Kg dry wt		EPA 1668 MOD	06/30/08

Validated By:



July 30, 2008

Jennifer Shackelford City of Portland Water Pollution Laboratory 6543 N. Burlington Ave. Portland, OR 97203

RE: Portland Harbor

Enclosed are the results of analyses for samples received by the laboratory on 06/13/08 14:32. The following list is a summary of the Work Orders contained in this report, generated on 07/30/08 15:38.

If you have any questions concerning this report, please feel free to contact me.

Work OrderProjectProjectNumberPRF0543Portland Harbor36238

TestAmerica Portland

Howard Holmes, Project Manager



THE LEADER IN ENVIRONMENTAL TESTING

City of Portland Water Pollution Laboratory

6543 N. Burlington Ave. Portland, OR 97203 Project Name: Project Number: Project Manager:

36238 Jennifer Shackelford

Portland Harbor

Report Created: 07/30/08 15:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FO 080764	PRF0543-01	Other wet	06/05/08 10:52	06/13/08 14:32
FO 080765	PRF0543-02	Other wet	06/09/08 11:47	06/13/08 14:32
FO 080766	PRF0543-03	Other wet	06/09/08 14:54	06/13/08 14:32
FO 080767	PRF0543-04	Other wet	06/05/08 11:43	06/13/08 14:32
FO 080768	PRF0543-05	Other wet	06/03/08 14:38	06/13/08 14:32

TestAmerica Portland

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Howard Holmes, Project Manager



THE LEADER IN ENVIRONMENTAL TESTING

City of Portland Water P	ollution Labora	tory		Project N	lame:	Portlar	nd Harbor			
6543 N. Burlington Ave.				Project N	lumber:	36238				Report Created:
Portland, OR 97203				Project N	lanager:	Jennifer	Shackelfor	1		07/30/08 15:38
					ganic C ica Conn					
			1	estAmer	ica Conn	ecticut				
Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PRF0543-01 (FO 080764)			Oth	er wet		Sam	pled: 06/05/	08 10:52		
Total Organic Carbon - Duplicates	9060	14100		100	mg/Kg	1x	17307	06/24/08 20:14	06/24/08 20:14	
PRF0543-02 (FO 080765)			Oth	er wet		Sam	pled: 06/09/	/08 11:47		
Total Organic Carbon - Duplicates	9060	75900		100	mg/Kg	1x	17307	06/24/08 20:29	06/24/08 20:29	
PRF0543-03 (FO 080766)			Oth	er wet		Sam	pled: 06/09/	08 14:54		
Total Organic Carbon - Duplicates	9060	98500		100	mg/Kg	1x	17307	06/24/08 21:01	06/24/08 21:01	
PRF0543-04 (FO 080767)			Oth	er wet		Sam	pled: 06/05/	/08 11:43		
Total Organic Carbon - Duplicates	9060	126000		100	mg/Kg	1x	17307	06/24/08 21:18	06/24/08 21:18	
PRF0543-05 (FO 080768)			Oth	er wet		Sam	pled: 06/03/	/08 14:38		
Total Organic Carbon - Duplicates	9060	94600		100	mg/Kg	1x	17307	06/24/08 21:37	06/24/08 21:37	

TestAmerica Portland

Haulus tun

Howard Holmes, Project Manager



THE LEADER IN ENVIRONMENTAL TESTING

City of Portland Water Pollution Laboratory

6543 N. Burlington Ave. Portland, OR 97203 Project Name: Project Number: Project Manager:

Portland Harbor 36238

36238 Jennifer Shackelford Report Created: 07/30/08 15:38

Total Organic Carbon - Laboratory Quality Control Results TestAmerica Connecticut														
QC Batch: 17307	Soil Pro	eparation Met	hod: NA											
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)) Analyzed	Notes
LCS (220-17307-5)				QC Source:				Extra	cted:	06/24/08 19	:26			
Total Organic Carbon - Duplicates	9060	4019		100	mg/Kg	1x		3530	114%	(28-172)			06/24/08 19:26	
Blank (220-17307-6)				QC Source:				Extra	cted:	06/24/08 19	9:32			
Total Organic Carbon - Duplicates	9060	ND		100	mg/Kg	1x							06/24/08 19:32	

TestAmerica Portland

Haukus lun

Howard Holmes, Project Manager



City of Portland Water Pollution Laboratory

6543 N. Burlington Ave. Portland, OR 97203 Project Name: Project Number: Project Manager: **Portland Harbor** 36238 Jennifer Shackelford

Report Created: 07/30/08 15:38

Notes and Definitions

Report Specific Notes:

None

Laboratory Reporting Conventions:

- DET Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA _ Not Reported / Not Available
- dry Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL* METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B.
 *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
- Electronic
 Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*.

 Signature
 Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory.

 Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Portland

Test Analytical testing corporation

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 (1921) F. Lost Ave, Spokane, WA 99206-5302 (1995) SW Nimble: Ave, Beaverton, OR 97008 (7145) (1996) A 1996 (1997) SW Nimble: Ave, Accharge: AK 99502(1119) 425-420-9200 FAX 420-9210 509-924-9200 FAX 924 9290 503-906-9200 FAX 906-9210 967 563-9200 FAX 563 9210

Cł	HAIN OF CUST	ODY REPORT	Wor	*k Order #: PRF0543
CLIENT: City of Portland		INVOICE TO		TURNAROUND REQUEST
REPORT TO: address Jennifer Sharke	1 ford	Charles Lytle	X	in Business Days * Organic & Inorganic Analyses 7 5 4 3 2 1 <1
PHONE: FAX.	LA	P.O. NUMBER. 36238	\$17,7	Petroleum Hydrocarbon Analyses
PROJECT NAME: Pintiand Hisber	<u>×</u>	PRESERVATIVE		5 4 3 2 1 <1
PROJECT NUMBER: Stormwater Samp -	\$			STD
	5	REQUESTED ANALYSES	······	OTHER Specify:
SAMPLED BY: OF 53A Sed Traps			* Turns	iround Requests less than standard may incur Rush Charges.
CLIENT SAMPLE SAMPLING IDENTIFICATION DATE:TIME	700			TRIX = OF LOCATION TA S, O1 CONT. COMMENTS WO ID
FO 080764 6/5/08 1052	ХХ	TS(W/W) = 71.8 %	(
FO 080765 6/9/08 1147	ΧΧ	TS(W/W) = 43.1%		○ Z & ⊗
FO080766 6/9/08 1454	ΧΧ	TS(w/w) = 54.9%	C C	
FO 080767 6/5/48 1143	XX	TS(w/w) = 49.9 %	(SZ CECE
FO 080768 6/3/08 1438	XX	TS(w/w) = 47.57.		$1 2 \otimes \otimes$
6				
8				
9				
10				(112/18
PRINTNAME: Bonaklach FIRM (ity of Portlan	date 6/13/08 RECEIVED BY BOL TIME 13:00 PRINT NAME BO	hEC)	DATE: 6/13/08 FIRM: TAC TIME: /3 /0 K GATE: W13 0 0
RELEASED BY: GUTTER		DATE: 6/13/06 RECEIVED BY: King TIME: 14:32 PRINT NAME: BARA	we Enville	FIRM: MM TIME: 1432
ADDITIONAL REMARKS: & PCB 209 Con	genera to 1	Price Analytical 1	J	TEMP: L. D. DAGE OF
88 Total solids	(w/w) de	termined @ WPGL due	to limited Sur	mple size -
use these	values in	calculations.		

	Test	America Sample R	eceipt Checklist	о сцз Conter Davas
Received by:	Unpacked by:	Logged-in by:	Work Order No.	REDUCTORE LEAR
(section 4)	is-choo B ¹	—·· —		FPortland
Date 1/3/08	Date: UITSUS	Date: 113/08		und Harber
Lime 1432	Initials BLK	Initials: FL		remperature out of range
Initials. BLE				0
***ESI Clients (see Se	ection C)			Not enough Ice No Ice Ice Melted
Cooler Temperature (IR)	C plastic a	HA (oil/air OR ES	St client) Temperature Blank:	W/in 4 Hours Other
			1	°C DIGI #1 #2
A <u>Custody Seals</u> : (i	#)		B <u>Sample</u>	e Status:
Signature: Y N Date			(If N circled,	, see NOD)
X_None	e <u>Receive</u> c	<u>l from</u> :	<u>General</u> :	
Container Type:		TA Courier	Intact?	M N
#Coo		Senvoy	# Containers Match COC?	YI N none given
#Box	(2)	UPS	IDs Match COC?	
None	e (#Other:)	Fed Ex	For Analyses Requested:	КV N
		Client	Cyanide checked?	Y N ÃÃ
Coolant Type:			Correct Type & Preservatior	
×		USPS SDS	Adequate Volume?	
	5 100	Mid-Valley		N N
None		GS/TA	Within Hold Time?	N (Y)
Packing Material:		GS/Senvoy	Volatiles/ Oil Quality:	
Bubble	_	Other:	VOAs/ Syringes free of Headspa	ace? Y N (NA)
Styrof	oam Cubbies		TB on COC? not provided	Y N (NA)
Peanu	Its		Metals:	ŏ
None ((Other:)	i	HNO3 Preserved?	Y N (NA)
C ***ESI Clients Only:			Dissolved Metals Filtered?	Y N NA
eor onemo entry.			FED EX/ UPS: Was the tracking pape	r keepable? YES NO
Temperature Blan	•	DIGI #1 #2	If circled NO, what is the Tracking numb	
All preserved All preserved	l bottles checked Y N I accordingly? Y N (see NOD)	NA (voas/soils/all unp.) NA (voas/soils/all unp.)	FED EX Goldstreak UPS	DHL Other:
Comments:		Project Ma	anagers:	
	DM	Reviewed:		
	FIVI	iveniewed:	(Initial/Date)	



www.pacelabs.com

Report Prepared for:

Howard Holmes Test America 9405 SW Nimbus Avenue Beaverton OR 97008

REPORT OF LABORATORY ANALYSIS FOR PCBs

Report Prepared Date:

July 23, 2008

Pace Analytical Services, Inc. 1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

Report Information:

Pace Project #: 1075277 Sample Receipt Date: 06/17/2008 Client Project #: PRF0543 Client Sub PO #: N/A State Cert #: MN200001-004

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed and prepared by:

port C. Marya

Scott Unze, Project Manager (612) 607-6383 (612) 607-6444 (fax) scott.unze@pacelabs.com



Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.



Pace Analytical Services, Inc. 1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on five samples submitted by a representative of Test America - Portland. The samples were analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to approximately 50 parts per trillion and were adjusted for sample volume.

The isotopically-labeled PCB internal standards in the sample extracts were recovered at 6-291%. With twenty-six exceptions, the labeled internal standard recoveries obtained for this project were within the target ranges specified in the method. Since the quantification of the native PCB congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained. Sample PRF0543-04, FO080767 was analyzed at a dilution due to matrix components that remained in the sample extract after sample processing. Analyte levels exhibiting isotope ratios outside of the acceptance ranges were flagged "I" on the results tables.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain low levels of several PCB congeners. Several samples contained one or more of these analytes at levels less then ten times the levels found in the method blank. In general, levels less than ten times the background are not considered statistically different from the background. However, the results demonstrate that the analytical process did not introduce significant levels of PCB congeners to the sample extracts.

A laboratory spike sample was also prepared with the sample batch using reference material that had been fortified with native standards. The results show that the spiked native compounds in the lab spike were recovered at 95-130%. These results indicate a high degree of accuracy for these determinations. Matrix spikes were also prepared with the sample set. Many of the analytes were impacted by the levels present in the sample material. Those analytes not impacted by elevated sample levels showed reasonable recovery and relative percent difference values.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

Appendix A

Sample Management



SUBCONTRACT ORDER

TestAmerica Portland

PRF0543

1075277

SENDING LABORATORY:			RECE	IVING LABORATORY:					
TestAmerica Portland Pace Analytical Services, Inc - Minneapolis									
9405 SW Nimbus Ave.	Elm Street Suite 200		•						
Beaverton, OR 97008			Minn	eapolis, MN 55414					
Phone: (503) 906-9200			Phor	ne :(612) 607-1700					
Fax: (503) 906-9210			Fax:	(612) 607-6444					
Project Manager: Howard	Holmes		•	ect Location:					
h			Recei	pt Temperature:	_°C	Ice:	Y /	N	
Copy/Relog from PRF0542. Copy	y/Relog from PR	F0541.							
Analysis	Units	Due	Expires	C	omments	3			
Sample ID: PRF0543-01	Other wet		Sampled:	06/05/08 10:52				œ (
1668 Coplanar PCBs - SUB	ug/l	06/26/08	12/02/08 10:52		**209 Con	geners**			
Containers Supplied:						0			
4 oz. jar (B)			FO 080764						
Sample ID: PRF0543-02	Otherwat							["]]	
1668 Coplanar PCBs - SUB	Other wet ug/l	06/26/08	<u>Sampled:</u> 12/06/08 11:47	<u>06/09/08 11:47</u>	*209 Con	aonore**i	to Pac	<u>00~</u>	
•	ugn	00/20/00	12/00/08 11:47		209 001	geners	to Fac	-	
Containers Supplied:				F	0 080	765			
4 oz. jar (B)									
Sample ID: PRF0543-03	Other wet		Sampled:	06/09/08 14:54				003	
1668 Coplanar PCBs - SUB	ug/l	06/26/08	12/06/08 14:54	**	*209 Con	geners***	to Pace	•	
Containers Supplied:					Fo	~ ° ^ 7			
4 oz. jar (B)			·		F0	0807	60		
Sample ID: PRF0543-04	Other wet							04	
1668 Coplanar PCBs - SUB	ug/l	06/26/08	Sampled: 12/02/08 11:43	<u>06/05/08 11:43</u> **	*209 Con	neners***			
·	ugn	00/20/00	12/02/00 11.40		200 001	genera	101 400	,	
<i>Containers Supplied:</i> 4 oz. jar (B)					Fo	080	767	,	
Sample ID: PRF0543-05							~		
	Other wet	00/00/00		<u>06/03/08 14:38</u>	1000 0			205	
1668 Coplanar PCBs - SUB	ug/l	06/26/08	11/30/08 14:38	***	*209 Cong	geners***	to Pace	•	
Containers Supplied:					Fo	08	076	8	
4 oz. jar (B)							- 1 0	~	

Released By

6/10/03/4:40 Date/Time

face ceived By

G/17/00 gill temp: Date/Time (164

Released By

Date/Time

4 OI 52

Report No.....1075277_1668A

Sample Condition Upon Receipt								
Pace Analytical Client Nam	e:	ust	A	NPT: Ch	Project #_	1075277		
Courier: \Box Fed Ex \Box UPS O USPS \Box C Tracking #: $12 AE S97 OL 4216 ($ Custody Seal on Cooler/Box Present:	6642			al 🗌 Pace Other Is intact: 🖾 Pes [t iet	omiji Tota (15-16-) Manja		
Packing Material: 🔲 Bubble Wrap 🗡 Bub	ble Bags		None	Other		•		
Thermometer Used 230194010, 72310129			e: We	et Blue None [cooling process has begun		
Cooler Temperature 1.6°C Temp should be above freezing to 6°C	Biole	ogical	Tissu	e is Frozen: Yes No Comments:	Date and in contents:	Itials of person examining		
Chain of Custody Present:	<u>G</u>		□n//	A 1.		······		
Chain of Custody Filled Out:	(Pres		N//	4 2.				
Chain of Custody Relinquished:	Pes		<u>Ш</u> м//	3.				
Sampler Name & Signature on COC:	□Yes	Qato	N//	4.				
Samples Arrived within Hold Time:	¥∠dγes	۵No	□n//	5.				
Short Hold Time Analysis (<72hr):	Yes	DR0	□n#	6.		· · · · · · · · · · · · · · · · · · ·		
Rush Turn Around Time Requested:	□Yes	(QNO		7.				
Sufficient Volume:	PYes			8.				
Correct Containers Used:	E Yes	⊡No	□n/A	9.				
-Pace Containers Used:	□Yes	MAR0	DN/A					
Containers Intact:	€ es	□ No	DN/A	10.				
Filtered volume received for Dissolved tests	□Yes	□No	ER IA	161206				
Sample Labels match COC:	\sim		ARVIA	12.				
-Includes date/time/ID/Analysis Matrix: All containers needing preservation have been checked.	Soi (DYes			13.	······································			
All containers needing preservation are found to be in compliance with EPA recommendation.	⊡Yes	□No	- 					
exceptions; VOA, coliform, TOC, O&G, WI-DRO (water)		(CRIO		initial when completed	Lot # of added preservative			
Samples checked for dechlorination:	□Yes	ПNo		14.				
Headspace in VOA Vials (>6mm):	□Yes	ПNo	CARIA	15.				
Trip Blank Present:	□Yes	⊡No		16.				
Trip Blank Custody Seals Present	∐Yes	⊡No	G WA					
Pace Trip Blank Lot # (if purchased):	<u> </u>		, 			、		
Client Notification/ Resolution:		n a s omaka			Field Data Require	ed? Y / N		
Person Contacted:			Date/1	ime:				
Comments/ Resolution:				······································				
				·				
					·			
·····					- <u></u>			
				······································				
					<u> </u>			
Project Manager Review:	N/N		Culouist-Culo Pai	<u></u>	Date:	06/17/08		
— (\ .							

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALLC003rev 3, 11September2006 Report No.....1075277_1668A

Appendix B

Sample Analysis Summary



Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612- 607-6444

Method			- Test Amer	rica	SIS Nesulis	
Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PRF0543-0 107527700 P80708A_ SMT 14.1 g 28.2 10.1 g P80708A10 P80708A_0 BLANK-16	01;FO 0807 1 14 0 0		Matrix Dilution Collected Received Extracted Analyzed	Solid NA 06/05/2008 06/17/2008 06/30/2008 07/09/2008 00:1	4
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-4,4'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6,6'-TeCB 13C-3,3',4,4'-TeCB 13C-3,3',4,4'-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5',6,6'-OcCB 13C-2,3',3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	$\begin{array}{c} 8.486\\ 11.792\\ 12.140\\ 20.178\\ 16.512\\ 28.539\\ 20.540\\ 35.918\\ 36.505\\ 27.147\\ 40.177\\ 39.523\\ 38.970\\ 38.634\\ 43.397\\ 33.469\\ 46.482\\ 45.325\\ 49.803\\ 39.523\\ 52.354\\ 45.057\\ 54.984\\ 56.057\\ 54.984\\ 56.1858\\ 58.325\\ \end{array}$	$\begin{array}{c} 2.91\\ 3.01\\ 1.63\\ 1.48\\ 1.08\\ 1.04\\ 0.79\\ 0.75\\ 0.75\\ 1.60\\ 1.50\\ 1.50\\ 1.50\\ 1.52\\ 1.50\\ 1.29\\ 1.19\\ 1.21\\ 1.21\\ 1.21\\ 1.21\\ 1.20\\ 0.88\\ 0.92\\ 0.88\\ 0.78\\ 0.80\\ 0.72\end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 1.67\\ 1.51\\ 1.69\\ 1.86\\ 1.71\\ 1.96\\ 1.78\\ 1.87\\ 1.79\\ 1.80\\ 1.88\\ 1.65\\ 1.93\\ 1.88\\ 1.65\\ 1.93\\ 1.88\\ 1.71\\ 1.88\\ 3.09\\ 1.66\\ 1.24\\ 3.44\\ 2.01\\ 3.03\\ 2.15\\ 2.13\\ 2.35\\ 2.05\end{array}$	84 76 84 93 86 98 89 90 90 90 94 82 97 94 85 94 77 83 62 172 P 100 152 P 108 107 117 103
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	23.911 36.588 42.676	0.97 1.57 1.07	2.0 2.0 2.0	2.07 2.06 1.96	104 103 98
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	14.991 26.074 33.721 42.206 54.488	1.50 0.80 1.59 1.27 0.88	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

! = Outside QC Limits

RT = Retention Time

I = Interference

ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Report No.....1075277_1668A



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID
Lab Sample ID
Filename

PRF0543-01;FO 080764 1075277001 P80708A_14

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1				ND		49.4
2				ND		49.4
3				ND		49.4
4		12.164	1.50	117		49.4
5 6				ND		49.4
6		15.566	1.41	61.2		49.4
7				ND		49.4
8		16.153	1.43	292		49.4
9				ND		49.4
10				ND		49.4
11		19.424	1.42	192 B		59.3
12	12/13			ND		49.4
13	12/13			ND		49.4
14				ND		49.4
15		20.202	1.39	360		49.4
16		20.130	1.05	225		49.4
17		19.567	1.04	233		49.4
18	18/30	19.040	1.04	460 B		49.4
19		16.536	1.05	104		49.4
20	20/28	23.944	0.95	826		59.3
21	21/33	24.213	0.95	308		49.4
22		24.665	0.95	259		49.4
23				ND		49.4
24				ND		49.4
25	00/00			ND		49.4
26	26/29	22.938	0.96	119		49.4 49.4
27 28	20/28	19.843 23.944	1.00 0.95	56.9 (826)		49.4 59.3
28 29	26/29	23.944 22.938	0.95	(020) (119)		59.3 49.4
29 30	18/30	19.040	1.04	(460) B		49.4
30	10/30	23.592	0.94	(400) B 414		49.4
32		20.809	0.94	207		49.4
33	21/33	24.213	0.95	(308)		49.4
34	21/33		0.95	ND		49.4
35				ND		49.4
36				ND		49.4
37		28.556	0.95	341		49.4
38				ND		49.4
39				ND		49.4
40	40/41/71	28.372	0.76	692		49.4
41	40/41/71	28.372	0.76	(692)		49.4
42		27.818	0.77	244		49.4
43				ND		49.4
44	44/47/65	27.231	0.77	722		59.3
45	45/51	24.028	0.77	247		49.4
46		24.380	0.77	83.3		49.4
47	44/47/65	27.231	0.77	(722)		59.3
48		26.980	0.77	139		49.4

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

B = Less than TO times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

ND = Not Detected



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-01;FO 080764 1075277001 P80708A_14				
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
					119/119	
49	49/69	26.661	0.76	543		49.4
50	50/53	23.240	0.77	166		49.4
51	45/51	24.028	0.77	(247)		49.4
52	50/50	26.108	0.76	1030		49.4
53	50/53	23.240	0.77	(166)		49.4
54 55				ND ND		49.4 49.4
55 56		32.547	0.72	448		49.4
57			0.72	ND		49.4
58				ND		49.4
59	59/62/75	27.600	0.77	90.2		49.4
60	00/02/10	32.782	0.71	216		49.4
61	61/70/74/76	31.507	0.71	1260		49.4
62	59/62/75	27.600	0.77	(90.2)		49.4
63				ND		49.4
64		28.623	0.76	444		49.4
65	44/47/65	27.231	0.77	(722)		59.3
66		31.843	0.72	876		49.4
67				ND		49.4
68				ND		49.4
69	49/69	26.661	0.76	(543)		49.4
70	61/70/74/76	31.507	0.71	(1260)		49.4
71	40/41/71	28.372	0.76	(692)		49.4
72				ND		49.4
73 74	C4/70/74/7C			ND (1200)		49.4
74 75	61/70/74/76 59/62/75	31.507 27.600	0.71 0.77	(1260) (90.2)		49.4 49.4
76	61/70/74/76	31.507	0.77	(1260)		49.4
70	01/10/14/10	36.521	0.71	105		49.4
78				ND		49.4
79				ND		49.4
80				ND		49.4
81				ND		49.4
82		36.136	1.57	213		49.4
83		34.224	1.54	92.5		49.4
84		31.692	1.55	357		49.4
85	85/116/117	35.633	1.57	273		59.3
86	86/87/97/108/119/12		1.57	990		98.8
87	86/87/97/108/119/12		1.57	(990)		98.8
88	88/91	31.474	1.56	216		49.4
89	00/404/440			ND		49.4
90	90/101/113	33.738	1.55	1220		49.4
91	88/91	31.474	1.56	(216)		49.4
92 93	93/98/100/102	33.100	1.54 	238 ND		49.4 74.1
93 94	33/30/100/10Z			ND		49.4
94 95		30.518	1.55	951		49.4
96				ND		49.4

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

D = Less than to times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sar Lab Sam Filename	ble ID 107	F0543-01;FO 5277001)708A_14	080764	Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
97	86/87/97/108/119/125	34.928	1.57	(990)		98.8
98	93/98/100/102			ND		74.1
99	00/00/400/400	34.358	1.54	531		49.4
100	93/98/100/102			ND (1000)		74.1
101 102	90/101/113 93/98/100/102	33.738	1.55	(1220) ND		49.4 74.1
102	93/98/100/102			ND		49.4
103				ND		49.4
104		40.211	1.44	497		49.4
105		40.211		ND		49.4
107	107/124			ND		49.4
108	86/87/97/108/119/125	34.928	1.57	(990)		98.8
109	00/01/01/100/110/120	38.534	1.44	78.8		49.4
110	110/115	35.817	1.54	1640		49.4
111				ND		49.4
112				ND		49.4
113	90/101/113	33.738	1.55	(1220)		49.4
114				` ΝĎ		49.4
115	110/115	35.817	1.54	(1640)		49.4
116	85/116/117	35.633	1.57	(273)		59.3
117	85/116/117	35.633	1.57	(273)		59.3
118		39.003	1.44	1010		49.4
119	86/87/97/108/119/125	34.928	1.57	(990)		98.8
120				ND		49.4
121				ND		49.4
122				ND		49.4
123				ND		49.4
124	107/124			ND		49.4
125	86/87/97/108/119/125	34.928	1.57	(990)		98.8
126				ND		49.4
127	100/100			ND		49.4
128	128/166	43.514	1.23	246		98.8
129 130	129/138/163	42.240 41.569	1.22 1.22	1450 90.8		49.4 49.4
130		41.509	1.22	ND		49.4
132		39.070	1.22	520		49.4
133				ND		49.4
134	134/143	37.980	1.21	76.2		49.4
135	135/151	36.823	1.25	323		50.4
136		34.224	1.26	149		49.4
137		41.804	1.26	86.9		49.4
138	129/138/163	42.240	1.22	(1450)		49.4
139	139/140			ND		49.4
140	139/140			ND		49.4
141		41.150	1.17	216		49.4
142				ND		49.4
143	134/143	37.980	1.21	(76.2)		49.4
144		37.410	1.26	`55. 3		49.4

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

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Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-01;FO 1075277001 P80708A_14				
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145				ND		49.4
146		40.311	1.24	143		49.4
147	147/149	37.796	1.21	850		49.4
148				ND		49.4
149	147/149	37.796	1.21	(850)		49.4
150				ND		49.4
151	135/151	36.823	1.25	(323)		50.4
152				ND		49.4
153	153/168	40.965	1.24	945		59.3
154				ND		49.4
155				ND		49.4
156	156/157	46.499	1.17	163		49.4
157	156/157	46.499	1.17	(163)		49.4
158		42.642	1.23	150		49.4
159				ND		49.4
160				ND		49.4
161				ND		49.4
162	400/400/400			ND (4.450)		49.4
163	129/138/163	42.240	1.22	(1450)		49.4
164		41.904	1.21	91.3		49.4
165	400/400			ND (240)		49.4
166	128/166	43.514	1.23 1.14	(246)		98.8
167 168	153/168	45.359 40.965	1.14	51.5 (945)		49.4 59.3
169	155/100	40.905	1.24	(943) ND		49.4
170		49.199	1.00	192		49.4
171	171/173	45.594	1.02	74.1		49.4
172	17 17 17 10			ND		49.4
173	171/173	45.594	1.02	(74.1)		49.4
174	17 17 17 0	44.504	1.00	232		49.4
175				ND		49.4
176				ND		49.4
177		44.940	1.02	79.5		49.4
178				ND		49.4
179		39.875	1.05	94.4		49.4
180	180/193	47.941	1.01	413		49.4
181				ND		49.4
182				ND		49.4
183	183/185	44.286	1.05	163		49.4
184				ND		49.4
185	183/185	44.286	1.05	(163)		49.4
186				ND		49.4
187		43.648	1.05	275		49.4
188				ND		49.4
189				ND		49.4
190				ND		49.4
191				ND		49.4
192				ND		49.4

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-01;FO 080764 1075277001 P80708A_14				
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	47.941	1.01	(413)		49.4
194		54.510	0.86	` 75.Ź		49.4
195				ND		49.4
196				ND		69.1
197	197/200			ND		247
198	198/199	49.937	0.87	145		49.4
199	198/199	49.937	0.87	(145)		49.4
200	197/200			ŇĎ		247
201				ND		49.4
202				ND		49.4
203		50.792	0.89	87.7		49.4
204				ND		49.4
205				ND		49.4
206		56.730	0.78	72.0		49.4
207				ND		49.4
208				ND		49.4
209				ND		49.4

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level P = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. $12 \ of \ 52$

ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	PRF0543-01;FO 080764
Lab Sample ID	1075277001
Filename	P80708A_14

Congener Group	Concentration ng/Kg	
Total Manachlara Binhanyla	ND	
Total Monochloro Biphenyls	1020	
Total Dichloro Biphenyls		
Total Trichloro Biphenyls	3550	
Total Tetrachloro Biphenyls	7310	
Total Pentachloro Biphenyls	8310	
Total Hexachloro Biphenyls	5610	
Total Heptachloro Biphenyls	1520	
Total Octachloro Biphenyls	309	
Total Nonachloro Biphenyls	72.0	
Decachloro Biphenyls	ND	
Total PCBs	27700	

ND = Not Detected

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Pol	ychlorobiphe	nyl Sample Ana	alysis Results
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Client - Test America							
Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	107527700 P80708A_ SMT 11.9 g 56.9 5.15 g P80708A10 P80708A_0 BLANK-168	02;FO 0807 2 15 0 09		Matrix Dilution Collected Received Extracted Analyzed	Solid NA 06/09/2008 06/17/2008 06/30/2008 07/09/2008 01:1		
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-4,4'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6,6'-TeCB 13C-3,3',4,4'-TeCB 13C-3,3',4,4'-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,3',4,4',5,5'-HxCB 13C-2,2',3,3',4,4',5,5'-HxCB 13C-2,2',3,3',4,4',5,5',6-OcCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6-NoCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	$\begin{array}{c} 8.497\\ 11.900\\ 12.235\\ 20.239\\ 16.596\\ 28.607\\ 20.608\\ 36.019\\ 36.640\\ 27.198\\ 40.312\\ 39.642\\ 39.088\\ 38.736\\ 43.549\\ 33.554\\ 46.634\\ 45.494\\ 50.005\\ 39.625\\ 52.549\\ 45.192\\ 55.157\\ 56.903\\ 52.010\\ 58.498 \end{array}$	$\begin{array}{c} 2.85\\ 3.05\\ 1.59\\ 1.48\\ 1.11\\ 1.03\\ 0.79\\ 0.75\\ 0.77\\ 1.60\\ 1.54\\ 1.49\\ 1.53\\ 1.51\\ 1.49\\ 1.27\\ 1.21\\ 1.19\\ 1.23\\ 1.06\\ 0.98\\ 0.89\\ 0.85\\ 0.76\\ 0.73\\ \end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 1.42\\ 1.27\\ 1.44\\ 1.79\\ 1.62\\ 1.80\\ 1.57\\ 1.44\\ 1.33\\ 1.95\\ 1.17\\ 1.06\\ 1.28\\ 1.13\\ 0.922\\ 2.49\\ 2.14\\ 1.17\\ 0.770\\ 5.15\\ 1.60\\ 3.98\\ 1.89\\ 2.21\\ 2.73\\ 1.99\end{array}$	71 63 72 89 81 90 78 72 67 97 58 53 64 57 46 125 53 58 38 257 P 80 199 P 94 110 136 99	
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	23.979 36.724 42.811	0.99 1.57 1.05	2.0 2.0 2.0	1.94 1.69 1.96	97 84 98	
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	15.051 26.142 33.806 42.325 54.683	1.48 0.79 1.60 1.27 0.87	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA	

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

! = Outside QC Limits

RT = Retention Time

I = Interference

ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename PRF0543-02;FO 080765 1075277002 P80708A_15

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
1				ND		97.2
2				ND		97.2
3				ND		97.2
4		12.259	1.59	382		97.2
5				ND		97.2
6		15.626	1.38	137		97.2
7				ND		97.2
8		16.213	1.41	978		97.2
9				ND		97.2
10				ND		97.2
11		19.496	1.39	507 B		117
12	12/13	19.843	1.38	139		97.2
13	12/13	19.843	1.38	(139)		97.2
14	,			ND		97.2
15		20.263	1.40	1330		97.2
16		20.179	1.03	842		97.2
17		19.628	1.03	828		97.2
18	18/30	19.113	1.02	1470		97.2
19	10,00	16.620	1.03	522		97.2
20	20/28	23.995	0.94	3460		117
21	21/33	24.264	0.96	1130		97.2
22	21/55	24.733	0.94	1060		97.2
23		24.755	0.94	ND		97.2
23				ND		97.2
25		23.274	0.92	187		97.2
26	26/29	22.989	0.92	498		97.2
20	20/29	19.891	1.03	270		97.2
28	20/28	23.995	0.94	(3460)		117
20 29	26/29	23.995				97.2
29 30	18/30	19.113	0.94 1.02	(498)		97.2
30	18/30	19.113	1.02	(1470)		97.2 97.2
31		23.643 20.859	0.94	1710		
32	01/00		0.95	1240		97.2
33	21/33	24.264	0.96	(1130)		97.2 97.2
34				ND		
35				ND		97.2
36				ND		97.2
37		28.624	0.92	1360		97.2
38				ND		97.2
39	10/11/71			ND		97.2
40	40/41/71	28.423	0.76	3150		97.2
41	40/41/71	28.423	0.76	(3150)		97.2
42		27.869	0.77	1030		97.2
43	4447/05	26.427	0.78	121		97.2
44	44/47/65	27.282	0.77	3210		117
45	45/51	24.079	0.76	1320		97.2
46		24.431	0.77	445		97.2
47	44/47/65	27.282	0.77	(3210)		117
48		27.031	0.77	660		97.2

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-02;FO 1075277002 P80708A_15	080765			
				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
49	49/69	26.729	0.77	2400		97.2
50	50/53	23.291	0.76	997		97.2
51	45/51	24.079	0.76	(1320)		97.2
52		26.159	0.76	4520		97.2
53	50/53	23.291	0.76	(997)		97.2
54				ND		97.2
55				ND		97.2
56		32.682	0.72	2000		97.2
57				ND		97.2
58	50/62/75			ND		97.2
59 60	59/62/75	27.651 32.917	0.76 0.72	410 1010		97.2 97.2
61	61/70/74/76	31.592	0.72	5490		97.2
62	59/62/75	27.651	0.76	(410)		97.2
63	33/02/13	31.206	0.70	109		97.2
64		28.691	0.72	1980		97.2
65	44/47/65	27.282	0.77	(3210)		117
66		31.944	0.71	4070		97.2
67		30.921	0.69	119		97.2
68				ND		97.2
69	49/69	26.729	0.77	(2400)		97.2
70	61/70/74/76	31.592	0.71	(5490)		97.2
71	40/41/71	28.423	0.76	(3150)		97.2
72				ND		97.2
73				ND		97.2
74	61/70/74/76	31.592	0.71	(5490)		97.2
75	59/62/75	27.651	0.76	(410)		97.2
76	61/70/74/76	31.592	0.71	(5490)		97.2
77		36.656	0.71	436		97.2
78 79				ND ND		97.2
80				ND		97.2 97.2
81				ND		97.2
82		36.220	1.57	708		97.2
83		34.309	1.50	340		97.2
84		31.760	1.56	1630		97.2
85	85/116/117	35.717	1.55	1190		117
86	86/87/97/108/119/12		1.55	4220		194
87	86/87/97/108/119/12	35.030	1.55	(4220)		194
88	88/91	31.542	1.54	`102Ó		97.2
89		32.313	1.46	118		97.2
90	90/101/113	33.822	1.55	5010		97.2
91	88/91	31.542	1.54	(1020)		97.2
92	00/00//00///00	33.202	1.56	882		97.2
93	93/98/100/102	30.988	1.54	359		146
94				ND		97.2
95		30.586	1.56	3970		97.2
96				ND		97.2

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Client Sample ID Lab Sample ID Filename		PRF0543-02;FO 080765 1075277002 P80708A_15				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	IUPAC	Co-elutions	RT	Ratio		-	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	97	86/87/97/108/119/12	5 35.030	1.55	(4220)		194
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	98			1.54	`(359)		146
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				1.55	2390		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				1.54			
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$					· · · · ·		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		93/98/100/102		-			-
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	-						-
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$		407/404					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		86/87/97/108/119/12					-
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	109	110/115					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		110/115					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		90/101/113					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		36/101/113					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		110/115					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				1.55			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		86/87/97/108/119/12					194
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							97.2
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	121				ND		97.2
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	122				ND		97.2
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							-
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-	86/87/97/108/119/12					-
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		100/100					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		129/138/163					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							-
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		13//1/3					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		188/181					
138 129/138/163 42.358 1.21 (4220) 97.2 139 139/140 ND 97.2 140 139/140 ND 97.2 141 41.268 1.23 759 97.2 142 ND 97.2 143 134/143 38.082 1.20 (240) 97.2							
139 139/140 ND 97.2 140 139/140 ND 97.2 141 41.268 1.23 759 97.2 142 ND 97.2 143 134/143 38.082 1.20 (240) 97.2		129/138/163					
140 139/140 ND 97.2 141 41.268 1.23 759 97.2 142 ND 97.2 143 134/143 38.082 1.20 (240) 97.2							
141 41.268 1.23 759 97.2 142 ND 97.2 143 134/143 38.082 1.20 (240) 97.2							
142 ND 97.2 143 134/143 38.082 1.20 (240) 97.2			41.268	1.23			
	143	134/143	38.082	1.20	(240)		97.2
	144		37.512	1.23	230		97.2

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-02;FO 1075277002 P80708A_15	080765	Concontration		
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145				ND		97.2
146		40.430	1.22	473		97.2
147	147/149	37.881	1.21	3180		97.2
148				ND		97.2
149	147/149	37.881	1.21	(3180)		97.2
150				NĎ		97.2
151	135/151	36.925	1.25	(1370)		99.1
152				ND		97.2
153	153/168	41.084	1.22	2780		117
154				ND		97.2
155				ND		97.2
156	156/157	46.651	1.16	459		97.2
157	156/157	46.651	1.16	(459)		97.2
158		42.777	1.21	421		97.2
159				ND		97.2
160				ND		97.2
161				ND		97.2
162	100/100/100			ND (4220)		97.2
163	129/138/163	42.358	1.21	(4220)		97.2
164 165		42.040	1.21	271 ND		97.2 97.2
	128/166	43.649	1.21			97.2 194
166 167	120/100	45.511	1.14	(705) 113		97.2
168	153/168	41.084	1.14	(2780)		117
169	133/100	41.004		ND		97.2
170		49.351	0.98	550		97.2
171	171/173	45.746	1.04	218		97.2
172	17 1/17 5			ND		97.2
173	171/173	45.746	1.04	(218)		97.2
174	17 17 17 10	44.622	1.00	636		97.2
175				ND		97.2
176		40.899	1.07	123		97.2
177		45.092	0.98	263		97.2
178		42.828	1.05	180		97.2
179		39.977	1.05	422		97.2
180	180/193	48.093	1.01	1320		97.2
181				ND		97.2
182				ND		97.2
183	183/185	44.404	1.01	464		97.2
184				ND		97.2
185	183/185	44.404	1.01	(464)		97.2
186				ŇĎ		97.2
187		43.767	1.05	1140		97.2
188				ND		97.2
189				ND		97.2
190		49.921	1.00	97.7		97.2
191				ND		97.2
192				ND		97.2

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

D = Less that to times higher that method blank level<math>D = Basevery outside of Mothod 1668A control limits

P = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

Results reported on a dry weight basis

NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference

ND = Not Detected

ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-02;FO 080765 1075277002 P80708A_15				
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	48.093	1.01	(1320)		97.2
194		54.704	0.85	236		97.2
195		52.290	0.89	107		97.2
196		50.743	0.86	244		136
197	197/200			ND		486
198	198/199	50.089	0.89	626		97.2
199	198/199	50.089	0.89	(626)		97.2
200	197/200			` ΝĎ		486
201				ND		97.2
202		45.226	0.91	99.8		97.2
203		50.961	0.89	362		97.2
204				ND		97.2
205				ND		97.2
206		56.924	0.77	276		97.2
207				ND		97.2
208				ND		97.2
209		58.519	0.67	106		97.2

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level P = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	PRF05
Lab Sample ID	10752
Filename	P8070

PRF0543-02;FO 080765 1075277002 P80708A_15

Congener Group	Concentration ng/Kg	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	3470	
Total Trichloro Biphenyls	14600	
Total Tetrachloro Biphenyls	33500	
Total Pentachloro Biphenyls	33600	
Total Hexachloro Biphenyls	17900	
Total Heptachloro Biphenyls	5410	
Total Octachloro Biphenyls	1670	
Total Nonachloro Biphenyls	276	
Decachloro Biphenyls	106	
Total PCBs	111000	

ND = Not Detected Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results
Client - Test America

		Client -	 Test Amer 	rica		
Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PRF0543-0 107527700 P80708A_ SMT 4.99 g 45.1 2.74 g P80708A10 P80708A_0 BLANK-166	16 0 09	66	Matrix Dilution Collected Received Extracted Analyzed	Solid NA 06/09/2008 06/17/2008 06/30/2008 07/09/2008 02:2	20
PCB Isomer	IUPAC	RT	Ratio	ng's Addec	ng's Found	% Recovery
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-4,4'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-3,4,4'-TrCB 13C-2,2',6,6'-TeCB 13C-3,3',4,4'-TeCB 13C-2,2',3,3',4,4'-TeCB 13C-2,2',3,3',4,4'-TECB 13C-2,2',3,3',4,4'-TECB	$\begin{array}{c} 1\\ 3\\ 4\\ 15\\ 19\\ 37\\ 54\\ 81\\ 77\\ 104\\ 105\\ 114\\ 105\\ 114\\ 123\\ 126\\ 155\\ 156/157\\ 167\\ 169\\ 188\\ 189\\ 202\\ 205\\ 206\\ 208\\ 209\end{array}$	$\begin{array}{c} 8.570\\ 12.009\\ 12.332\\ 20.277\\ 16.658\\ 28.660\\ 20.644\\ 36.106\\ 36.743\\ 27.251\\ 40.400\\ 39.746\\ 39.192\\ 38.840\\ 43.637\\ 33.624\\ 46.739\\ 45.582\\ 50.110\\ 39.695\\ 52.644\\ 45.264\\ 55.253\\ 56.977\\ 52.084\\ 58.572 \end{array}$	3.43 3.39 1.60 1.49 1.10 1.00 0.79 0.75 1.59 1.54 1.49 1.54 1.49 1.54 1.49 1.51 1.49 1.46 1.27 1.21 1.20 1.19 1.06 1.04 0.93 0.85 0.77 0.79 0.72	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 1.33\\ 1.18\\ 1.47\\ 1.69\\ 1.58\\ 1.75\\ 1.79\\ 1.29\\ 1.17\\ 2.10\\ 1.02\\ 0.949\\ 1.14\\ 1.00\\ 0.886\\ 2.74\\ 2.15\\ 1.18\\ 0.773\\ 5.82\\ 1.64\\ 4.45\\ 1.63\\ 1.95\\ 2.77\\ 1.85\end{array}$	66 59 73 85 79 88 89 64 59 105 51 47 57 50 44 137 54 59 39 291 P 82 222 P 81 97 138 93
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	24.031 36.810 42.899	1.03 1.58 1.08	2.0 2.0 2.0	1.88 1.59 1.91	94 80 95
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	15.100 26.195 33.876 42.429 54.757	1.50 0.78 1.59 1.25 0.85	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

! =Outside QC Limits RT = Retention Time

KT = Kelenlion Time

I = Interference ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename PRF0543-03;FO 080766 1075277003 P80708A_16

1 ND 2 ND 3 ND 4 12.344 1.56 625 5 ND 6 15.675 1.42 270	183 183 183 183 183 183 183 183 183 183
2 ND 3 ND 4 12.344 1.56 625 5 ND 6 15.675 1.42 270	183 183 183 183 183 183 183 183
4 12.344 1.56 625 5 ND 6 15.675 1.42 270	183 183 183 183 183 183 183 183
4 12.344 1.56 625 5 ND 6 15.675 1.42 270	183 183 183 183 183 183 183
5 ND 6 15.675 1.42 270	183 183 183 183 183 183
6 15.675 1.42 270	183 183 183 183
	183 183
7 ND	183
8 16.263 1.43 2040	183
9 ND	183
10 ND	
11 19.534 1.42 1560 B	219
12 12/13 19.893 1.42 321	183
13 12/13 19.893 1.42 (321)	183
14 ND	183
15 20.301 1.40 3640	183
16 20.217 1.04 2050	183
17 19.666 1.03 2070	183
18 18/30 19.138 1.03 3620	183
19 16.682 1.04 538	183
20 20/28 24.048 0.94 9340	219
21 21/33 24.316 0.94 2860	183
22 24.786 0.93 2880	183
23 ND	183
24 ND	183
25 23.327 0.94 481	183
26 26/29 23.042 0.93 1260	183
27 19.929 1.02 458	183
28 20/28 24.048 0.94 (9340)	219
29 26/29 23.042 0.93 (1260)	183
30 18/30 19.138 1.03 (3620)	183
31 23.696 0.95 472Ó	183
32 20.912 0.93 2020	183
33 21/33 24.316 0.94 (2860)	183
34 ND 35 28.241 0.95 255	183
	183
36 ND 37 28.694 0.94 4200	183 183
37 28.694 0.94 4200 38 ND	183
36 ND	183
	183
40 40/41/71 28.476 0.75 8420 41 40/41/71 28.476 0.75 (8420)	183
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	183
42 27.939 0.75 2850	183
43 20.480 0.76 326 44 44/47/65 27.335 0.76 8690	219
44 44/47/85 27.335 0.76 8690 45 45/51 24.132 0.76 2470	183
45 45/51 24.152 0.76 2470 46 24.484 0.77 834	183
47 44/47/65 27.335 0.76 (8690)	219
48 27.100 0.76 1890	183

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-03;FO 1075277003 P80708A_16	080766			
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
					iig/itg	
49	49/69	26.782	0.76	6420		183
50	50/53	23.344	0.76	1630		183
51	45/51	24.132	0.76	(2470)		183
52	50/50	26.212	0.76	11400		183
53	50/53	23.344	0.76	(1630)		183
54				ND		183
55 56		32.735	0.71	ND 5000		183 183
50			0.71	ND		183
58				ND		183
59	59/62/75	27.721	0.77	987		183
60	33/02/13	32.970	0.71	2630		183
61	61/70/74/76	31.662	0.71	15300		183
62	59/62/75	27.721	0.77	(987)		183
63	00,02,10	31.276	0.70	284		183
64		28.744	0.77	5170		183
65	44/47/65	27.335	0.76	(8690)		219
66		32.014	0.71	10400		183
67		30.991	0.70	330		183
68				ND		183
69	49/69	26.782	0.76	(6420)		183
70	61/70/74/76	31.662	0.71	(15300)		183
71	40/41/71	28.476	0.75	(8420)		183
72				NĎ		183
73				ND		183
74	61/70/74/76	31.662	0.71	(15300)		183
75	59/62/75	27.721	0.77	(987)		183
76	61/70/74/76	31.662	0.71	(15300)		183
77		36.760	0.71	1250		183
78				ND		183
79				ND		183
80				ND		183
81				ND		183
82 83		36.291 34.395	1.52 1.52	2200 1250		183 183
83 84		31.830	1.52	5020		183
85	85/116/117	35.804	1.53	3880		219
86	86/87/97/108/119/12		1.53	13400		365
87	86/87/97/108/119/12		1.53	(13400)		365
88	88/91	31.595	1.54	3070		183
89		32.366	1.52	282		183
90	90/101/113	33.892	1.54	16700		183
91	88/91	31.595	1.54	(3070)		183
92		33.272	1.52	3030		183
93	93/98/100/102	31.042	1.58	978		274
94				ND		183
95		30.656	1.53	13100		183
96				ND		183

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sar Lab Sam Filename	ble ID 10	RF0543-03;FO 075277003 80708A_16	080766	Concentration	EMPC	EMI.
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	35.100	1.53	(13400)		365
98	93/98/100/102	31.042	1.58	(978)		274
99	00/00/100/100	34.530	1.55	7450		183
100	93/98/100/102	31.042	1.58	(978)		274
101	90/101/113	33.892	1.54	(16700)		183
102 103	93/98/100/102	31.042	1.58	(978)		274
103				ND ND		183 183
104		40.416	1.45	5340		183
105		40.410		ND		183
107	107/124	38.488	1.43	518		183
108	86/87/97/108/119/125	35.100	1.53	(13400)		365
109	00,01,01,100,110,120	38.739	1.40	734		183
110	110/115	35.989	1.54	21000		183
111				ND		183
112				ND		183
113	90/101/113	33.892	1.54	(16700)		183
114		39.762	1.39	280		183
115	110/115	35.989	1.54	(21000)		183
116	85/116/117	35.804	1.53	(3880)		219
117	85/116/117	35.804	1.53	(3880)		219
118		39.209	1.42	10300		183
119	86/87/97/108/119/125	35.100	1.53	(13400)		365
120				ND		183
121				ND		183
122 123				ND ND		183 183
123	107/124	38.488	1.43	(518)		183
124	86/87/97/108/119/125	35.100	1.43	(13400)		365
126	00/01/91/100/119/129			(13400) ND		183
127				ND		183
128	128/166	43.738	1.20	2700		365
129	129/138/163	42.463	1.20	14600		183
130		41.775	1.19	1090		183
131		38.789	1.23	233		183
132		39.276	1.22	5510		183
133		39.863	1.16	190		183
134	134/143	38.169	1.19	856		183
135	135/151	37.012	1.25	4620		186
136		34.379	1.25	2190		183
137	400/400/400	42.010	1.42	810		183
138	129/138/163	42.463	1.20	(14600)		183
139	139/140	38.588	1.19	301		183
140 141	139/140	38.588	1.19	(301)		183
141		41.356	1.21	2540 ND		183 183
142	134/143	38.169	1.19	(856)		183
143		37.582	1.26	499		183
1 17		01.002	1.20	100		100

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

ND = Not Detected



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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-03;FO 1075277003 P80708A_16	080766	Concentration	FMDO	
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145				ND		183
146		40.517	1.19	1750		183
147	147/149	37.968	1.21	10200		183
148				ND		183
149	147/149	37.968	1.21	(10200)		183
150	105/151			ND		183
151	135/151	37.012	1.25	(4620)		186
152	450/400			ND		183
153	153/168	41.171	1.21	10200		219
154 155				ND ND		183 183
155	156/157	46.739	1.15	1670		183
157	156/157	46.739	1.15	(1670)		183
158	130/137	42.865	1.20	1510		183
159				ND		183
160				ND		183
161				ND		183
162				ND		183
163	129/138/163	42.463	1.20	(14600)		183
164		42.127	1.10	1030		183
165				ND		183
166	128/166	43.738	1.20	(2700)		365
167		45.599	1.15	389		183
168	153/168	41.171	1.21	(10200)		219
169				ND		183
170 171	171/173	49.439	0.98 1.03	1870 724		183
172	1/1/1/3	45.817 47.511	1.03	380		183 183
173	171/173	45.817	1.00	(724)		183
174	17 1/17 5	44.693	1.02	2270		183
175				ND		183
176		40.970	1.02	392		183
177		45.163	1.01	880		183
178		42.916	1.06	570		183
179		40.064	1.05	1240		183
180	180/193	48.181	1.00	4180		183
181				ND		183
182				ND		183
183	183/185	44.492	1.00	1680		183
184	400/405			ND		183
185	183/185	44.492	1.00	(1680)		183
186 187		43.855	 1.05	ND 3610		183 183
188		43.655	1.05	ND		183
189				ND		183
190		50.009	0.98	318		183
191				ND		183
192				ND		183

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

B = Bacoverv outside of Method 1668A control limits

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

ND = Not Detected



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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-03;FO 080766 1075277003 P80708A_16				
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	48.181	1.00	(4180)		183
194		54.778	0.84	729		183
195		52.364	0.81	334		183
196		50.831	0.89	762		256
197	197/200			ND		913
198	198/199	50.160	0.88	2040		183
199	198/199	50.160	0.88	(2040)		183
200	197/200			ŇĎ		913
201		46.236	0.90	299		183
202		45.297	0.91	328		183
203		51.032	0.90	1170		183
204				ND		183
205				ND		183
206		56.999	0.76	1020		183
207				ND		183
208		52.105	0.78	293		183
209		58.594	0.69	502		183

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level P = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename PRF0543-03;FO 080766 1075277003 P80708A_16

Congener Group	Concentration ng/Kg	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	8450	
Total Trichloro Biphenyls	36800	
Total Tetrachloro Biphenyls	86200	
Total Pentachloro Biphenyls	109000	
Total Hexachloro Biphenyls	63000	
Total Heptachloro Biphenyls	18100	
Total Octachloro Biphenyls	5660	
Total Nonachloro Biphenyls	1310	
Decachloro Biphenyls	502	
Total PCBs	329000	

ND = Not Detected Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results
Client Test America

		Client -	 Test Amer 	rica			
Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PRF0543-0 107527700 P80722A_' SMT 20.1 g 50.1 10.0 g P80722A08 P80722A_08 BLANK-168	04;FO 08070 4 15 3 07		Matrix Dilution Collected Received Extracted Analyzed	Solid 5 06/05/2008 06/17/2008 06/30/2008 07/23/2008 02:5	1	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	I ng's Found	% Recovery	
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-4,4'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6'-TeCB 13C-3,4,4'-TeCB 13C-3,3',4,4'-TeCB 13C-3,3',4,4'-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HpCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	$\begin{array}{c} 8.116\\ 11.447\\ 11.782\\ 19.929\\ 16.191\\ 28.362\\ 20.246\\ 35.858\\ 36.445\\ 26.920\\ 40.151\\ 39.497\\ 38.943\\ 38.591\\ 43.471\\ 33.376\\ 46.574\\ 45.400\\ 49.978\\ 39.430\\ 52.529\\ 45.048\\ 55.115\\ 56.839\\ 51.925\\ 58.413\\ \end{array}$	3.46 3.50 1.74 1.46 0.97 1.08 0.78 0.78 0.78 0.78 1.59 1.49 1.54 1.58 1.66 1.33 1.28 1.25 1.24 1.24 1.24 1.05 1.00 0.95 0.93 0.72 0.75 0.68	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 0.170\\ 0.523\\ 0.311\\ 1.23\\ 0.508\\ 1.33\\ 0.982\\ 0.765\\ 0.691\\ 2.14\\ 0.774\\ 0.802\\ 0.930\\ 0.913\\ 1.26\\ 3.16\\ 2.46\\ 1.29\\ 0.957\\ 2.88\\ 1.64\\ 1.87\\ 1.34\\ 1.32\\ 1.32\\ 1.55\end{array}$	8 26 16 62 25 66 49 38 35 107 39 40 46 63 158 62 65 48 144 82 93 67 66 66 77	P P
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	23.683 36.529 42.666	1.03 1.70 1.05	2.0 2.0 2.0	1.55 1.09 1.35	78 55 67	
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	14.682 25.863 33.611 42.197 54.641	1.54 0.75 1.65 1.36 0.91	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA	

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected

NA = Not Applicable

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* = See Discussion

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ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Client Sample ID

Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

PRF0543-04;FO 080767

Lab Sam	ple ID	1075277004	000707			
Filename	Co-elutions	P80722A_15 RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		8.140	2.77	321		49.8
1 2		11.195				
2 3		11.471	2.84 2.92	307 243		49.8
3 4						49.8
		11.806	1.52	1330		49.8
5 6		 15.257		ND		49.8
6 7			1.45	1120		49.8
		14.933	1.40	127		49.8
8		15.856	1.49	3590		49.8
9		14.706	1.45	211		49.8
10				ND		49.8
11	40/40	19.175	1.47	6920		59.8
12	12/13	19.534	1.43	621		49.8
13	12/13	19.534	1.43	(621)		49.8
14				NĎ		49.8
15		19.953	1.47	4100		49.8
16		19.834	1.05	2170		49.8
17		19.282	1.05	3690		49.8
18	18/30	18.755	1.04	6890		49.8
19		16.215	1.08	662		49.8
20	20/28	23.717	0.97	18700		59.8
21	21/33	23.985	0.99	7760		49.8
22		24.438	0.99	6280		49.8
23				ND		49.8
24		19.702	1.23 I		85.1	49.8
25		22.996	0.97	1250		49.8
26	26/29	22.711	0.98	3160		49.8
27		19.558	1.05	723		49.8
28	20/28	23.717	0.97	(18700)		59.8
29	26/29	22.711	0.98	`(3160)		49.8
30	18/30	18.755	1.04	(6890)		49.8
31		23.365	0.97	Ì390Ó		49.8
32		20.531	0.96	3290		49.8
33	21/33	23.985	0.99	(7760)		49.8
34		22.157	0.96	`57.9		49.8
35		27.943	1.00	469		49.8
36				ND		49.8
37		28.395	1.00	5810		49.8
38				ND		49.8
39				ND		49.8
40	40/41/71	28.161	0.78	11000		49.8
41	40/41/71	28.161	0.78	(11000)		49.8
42		27.607	0.77	5360		49.8
43		26.148	0.77	676		49.8
44	44/47/65	27.020	0.77	19300		59.8
45	45/51	23.784	0.78	3310		49.8
46	10/01	24.119	0.76	1010		49.8
47	44/47/65	27.020	0.70	(19300)		59.8
48	1, 17,00	26.769	0.78	3680		49.8
70		20.703	0.70	0000		-0.0

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl **Sample Analysis Results**

Client Sar Lab Samp Filename		PRF0543-04;FO 1075277004 P80722A_15	080767			
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
					iig/itg	
49	49/69	26.450	0.78	13100		49.8
50	50/53	22.979	0.77	2870		49.8
51	45/51	23.784	0.78	(3310)		49.8
52	50/50	25.880	0.77	25400		49.8
53 54	50/53	22.979	0.77	(2870)		49.8
54 55				ND ND		49.8 49.8
55 56		32.487	0.75	7140		49.8
57		30.324	0.75	659		49.8
58				ND		49.8
59	59/62/75	27.389	0.79	1560		49.8
60	00/02/10	32.755	0.75	3580		49.8
61	61/70/74/76	31.380	0.76	27300		49.8
62	59/62/75	27.389	0.79	(1560)		49.8
63		30.995	0.75	561		49.8
64		28.429	0.77	8270		49.8
65	44/47/65	27.020	0.77	(19300)		59.8
66		31.749	0.75	15200		49.8
67		30.710	0.76	717		49.8
68		29.787	0.74	151		49.8
69	49/69	26.450	0.78	(13100)		49.8
70	61/70/74/76	31.380	0.76	(27300)		49.8
71	40/41/71	28.161	0.78	(11000)		49.8
72		29.469	0.70	264		49.8
73 74	61/70/74/76			ND (27200)		49.8
74 75	61/70/74/76 59/62/75	31.380 27.389	0.76	(27300)		49.8 49.8
76	61/70/74/76	31.380	0.79 0.76	(1560) (27300)		49.8
70	01/10/14/10	36.461	0.70	2230		49.8
78				ND		49.8
79		34.768	0.66	195		49.8
80				ND		49.8
81		35.875	0.79	77.2		49.8
82		36.009	1.54	2740		49.8
83		34.097	1.57	1530		49.8
84		31.514	1.57	6510		49.8
85	85/116/117	35.522	1.59	3790		59.8
86	86/87/97/108/119/12		1.57	17600		99.7
87	86/87/97/108/119/12		1.57	(17600)		99.7
88	88/91	31.296	1.58	4320		49.8
89	00/101/112	32.068	1.59	333		49.8
90	90/101/113	33.627	1.56	24100		49.8
91 92	88/91	31.296	1.58	(4320)		49.8
92 93	93/98/100/102	33.057 30.726	1.56 1.55	4520 1240		49.8 74.7
93 94	33/30/100/10Z	29.837	1.49	179		49.8
94 95		30.324	1.54	21600		49.8
96		27.322	1.62	227		49.8

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sar Lab Samp Filename		PRF0543-04;FO 1075277004 P80722A_15	080767			
	• • •			Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
97	86/87/97/108/119/12	34.818	1.57	(17600)		99.7
98	93/98/100/102	30.726	1.55	(1240)		74.7
99		34.248	1.59	12300		49.8
100	93/98/100/102	30.726	1.55	(1240)		74.7
101	90/101/113	33.627	1.56	(24100)		49.8
102	93/98/100/102	30.726	1.55	(1240)		74.7
103		29.619	1.54	249 ND		49.8
104 105		40.184	1.53	11000		49.8 49.8
105		40.104	1.55	ND		49.8
107	107/124	38.239	1.53	890		49.8
108	86/87/97/108/119/12		1.57	(17600)		99.7
109	00/01/01/100/110/12	38.491	1.50	1340		49.8
110	110/115	35.707	1.55	27200		49.8
111				ND		49.8
112				ND		49.8
113	90/101/113	33.627	1.56	(24100)		49.8
114		39.514	1.52	5 9Ó		49.8
115	110/115	35.707	1.55	(27200)		49.8
116	85/116/117	35.522	1.59	(3790)		59.8
117	85/116/117	35.522	1.59	(3790)		59.8
118		38.977	1.53	22500		49.8
119	86/87/97/108/119/12		1.57	(17600)		99.7
120		37.048	1.78	63.2		49.8
121				ND		49.8
122 123		39.295 38.608	1.48 1.45	303 519		49.8 49.8
123	107/124	38.239	1.45	(890)		49.8
125	86/87/97/108/119/12		1.57	(17600)		99.7
126	00/01/01/100/110/12	43.505	1.50	282		49.8
127				ND		49.8
128	128/166	43.505	1.22	3870		99.7
129	129/138/163	42.230	1.23	23600		49.8
130		41.543	1.15	1550		49.8
131		38.524	1.27	388		49.8
132		38.994	1.24	9650		49.8
133		39.614	1.22	322		49.8
134	134/143	37.870	1.25	1570		49.8
135	135/151	36.713	1.27	10100		50.8
136		34.063	1.26	4460		49.8
137	120/128/162	41.794	1.18	1290		49.8
138 139	129/138/163 139/140	42.230	1.23	(23600)		49.8
139	139/140	38.323 38.323	1.26 1.26	516 (516)		49.8 49.8
140	133/140	41.123	1.20	3920		49.8
141				ND		49.8
142	134/143	37.870	1.25	(1570)		49.8
144		37.283	1.20	877		49.8
-						

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

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P = Recovery outside of Method 1668A control limits

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Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-04;FO 1075277004 P80722A_15	080767	Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	ng/Kg	ng/Kg
145				ND		49.8
146		40.302	1.23	2970		49.8
147	147/149	37.686	1.25	23000		49.8
148				ND		49.8
149	147/149	37.686	1.25	(23000)		49.8
150	405/454			ND		49.8
151	135/151	36.713	1.27	(10100)		50.8
152	150/160			ND 16000		49.8
153 154	153/168	40.956	1.24 1.13	16900 219		59.8 49.8
154		36.998		ND		49.8 49.8
155	156/157	46.590	1.22	4600		49.8
157	156/157	46.590	1.22	(4600)		49.8
158	100/107	42.650	1.22	2240		49.8
159				ND		49.8
160				ND		49.8
161				ND		49.8
162		44.897	1.33	125		49.8
163	129/138/163	42.230	1.23	(23600)		49.8
164		41.895	1.19	` 139Ó		49.8
165				ND		49.8
166	128/166	43.505	1.22	(3870)		99.7
167		45.433	1.25	1230		49.8
168	153/168	40.956	1.24	(16900)		59.8
169				ND		49.8
170		49.273	1.03	3340		49.8
171	171/173	45.601	1.00	1310		49.8
172	474/470	47.345	1.05	642		49.8
173	171/173	45.601	1.00	(1310)		49.8
174		44.494 43.354	1.05 1.05	5170		49.8 49.8
175 176		40.704	1.03	223 759		49.8
177		44.947	1.03	2550		49.8
178		42.700	1.08	1150		49.8
179		39.782	1.06	3190		49.8
180	180/193	48.016	1.03	7330		49.8
181		45.383	1.19	67.1		49.8
182				ND		49.8
183	183/185	44.293	1.04	3700		49.8
184				ND		49.8
185	183/185	44.293	1.04	(3700)		49.8
186				NĎ		49.8
187		43.639	1.05	6670		49.8
188				ND		49.8
189		52.550	1.18	229		49.8
190		49.844	1.02	548		49.8
191		48.385	0.96	141		49.8
192				ND		49.8

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

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Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sar Lab Samp Filename		PRF0543-04;FO 1075277004 P80722A_15	080767			
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	48.016	1.03	(7330)		49.8
194		54.662	0.99	1420		49.8
195		52.205	0.87	617		49.8
196		50.665	0.91	1050		69.8
197	197/200	47.043	0.90	681		249
198	198/199	49.994	0.90	2750		49.8
199	198/199	49.994	0.90	(2750)		49.8
200	197/200	47.043	0.90	(681)		249
201		46.037	0.96	1290		49.8
202		45.065	0.92	1470		49.8
203		50.883	0.90	1440		49.8
204				ND		49.8
205		55.158	0.88	85.0		49.8
206		56.883	0.81	2020		49.8
207		52.916	0.82	1310		49.8
208		51.947	0.84	377		49.8
209		58.456	0.69	743		49.8

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level P = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	F
Lab Sample ID	1
Filename	F

PRF0543-04;FO 080767 1075277004 P80722A_15

Congener Group	Concentration ng/Kg	
Total Monochloro Biphenyls	871	
Total Dichloro Biphenyls	18000	
Total Trichloro Biphenyls	74800	
Total Tetrachloro Biphenyls	154000	
Total Pentachloro Biphenyls	166000	
Total Hexachloro Biphenyls	115000	
Total Heptachloro Biphenyls	37000	
Total Octachloro Biphenyls	10800	
Total Nonachloro Biphenyls	3710	
Decachloro Biphenyls	743	
Total PCBs	580000	

ND = Not Detected Results reported on a dry weight basis

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Method 1668A Po	ychlorobi	phenyl Sam	ple Anal	ysis Results
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WEITOU			- Test Amei	rica	SIS Nesulis		
Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PRF0543-0 107527700 P80711A_ BAL 21.1 g 52.5 10.0 g P80711A0 P80711A0 BLANK-16	12 5 04	68	Matrix Dilution Collected Received Extracted Analyzed	Solid NA 06/03/2008 06/17/2008 06/30/2008 07/11/2008 23:0	08	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	/
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-4,4'-DiCB 13C-4,4'-DiCB 13C-2,2',6-TrCB 13C-3,4,4'-TrCB 13C-2,2',6,6'-TeCB 13C-3,3',4,4'-TeCB 13C-2,3',4,4'-TeCB 13C-2,3',4,4'-TeCB 13C-2,3',4,4'-5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,2',3,3',4,4',5,5'-HpCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	$\begin{array}{c} 8.212\\ 11.591\\ 11.915\\ 20.122\\ 16.360\\ 28.588\\ 20.422\\ 36.085\\ 36.672\\ 27.129\\ 40.378\\ 39.708\\ 39.708\\ 39.708\\ 39.708\\ 39.171\\ 38.819\\ 43.666\\ 33.536\\ 46.768\\ 45.594\\ 50.139\\ 39.657\\ 52.685\\ 45.259\\ 55.250\\ 56.974\\ 52.103\\ 58.526\end{array}$	$\begin{array}{c} 1.11\\ 2.61\\ 1.81\\ 1.57\\ 1.23\\ 1.16\\ 0.81\\ 0.69\\ 0.72\\ 1.64\\ 1.54\\ 1.58\\ 1.57\\ 1.57\\ 1.46\\ 1.26\\ 1.20\\ 1.06\\ 1.20\\ 1.06\\ 1.15\\ 1.12\\ 1.10\\ 0.95\\ 0.75\\ 0.66\\ 0.77\\ 0.78\end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 0.0897\\ 0.247\\ 0.199\\ 0.931\\ 0.356\\ 0.996\\ 0.624\\ 0.615\\ 0.547\\ 1.66\\ 0.769\\ 0.770\\ 0.894\\ 0.942\\ 0.674\\ 1.87\\ 1.82\\ 1.10\\ 0.606\\ 4.66\\ 1.88\\ 3.31\\ 1.21\\ 1.16\\ 1.79\\ 0.808 \end{array}$	$\begin{array}{c} 6\\ 13\\ 10\\ 47\\ 19\\ 50\\ 31\\ 31\\ 27\\ 83\\ 38\\ 45\\ 47\\ 34\\ 94\\ 46\\ 55\\ 30\\ 233\\ 94\\ 165\\ 67\\ 58\\ 90\\ 40\\ \end{array}$	PP P
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	23.910 36.756 42.877	0.95 1.52 1.14	2.0 2.0 2.0	1.36 1.00 1.06	68 50 53	
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	14.850 26.073 33.804 42.408 54.754	1.53 0.85 1.54 1.32 0.92	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA	

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level P = Recovery outside of Method 1668A control limits

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Results reported on a dry weight basis

ND = Not Detected

NA = Not Applicable

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Client Sample ID

Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414

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Method 1668A Polychlorobiphenyl Sample Analysis Results

PRF0543-05;FO 080768

Lab Sample ID		1075277005						
Filename		P80711A_12						
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg		
1		8.236	2.89	173		49.8		
2		11.340	2.70	184		49.8		
2		11.615	2.91	398		49.8		
3 4		11.939	1.51	968		49.8		
				ND		49.8		
5 6		15.438	1.36	831		49.8		
7		15.102	1.47	147		49.8		
8		16.037	1.37	3390		49.8		
9		14.874	1.46	206		49.8		
10				ND		49.8		
11		19.367	1.36	2980		59.8		
12	12/13	19.739	1.36	944		49.8		
13	12/13	19.739	1.36	(944)		49.8		
14	12/13			ND		49.8		
15		20.146	1.43	4190		49.8		
16		20.026	0.99	1830		49.8		
17		19.475	1.03	3460		49.8		
18	18/30	18.948	1.03	7090		49.8		
19	10/00	16.396	1.10	757		49.8		
20	20/28	23.926	0.97	18700		59.8		
20	21/33	24.195	0.96	6150		49.8		
22	21/33	24.664	0.90	5060		49.8		
23		24.004		ND		49.8		
23				ND		49.8		
25		23.205	0.96	1230		49.8		
26	26/29	22.920	0.98	2850		49.8		
20	20/23	19.751	1.00	859		49.8		
28	20/28	23.926	0.97	(18700)		59.8		
29	26/29	22.920	0.98	(2850)		49.8		
30	18/30	18.948	1.03	(7090)		49.8		
31	10/00	23.574	0.97	14000		49.8		
32		20.740	0.96	3760		49.8		
33	21/33	24.195	0.96	(6150)		49.8		
34	21/00	22.350	0.89	52.9		49.8		
35		28.169	0.95	315		49.8		
36				ND		49.8		
37		28.622	0.97	4050		49.8		
38				ND		49.8		
39		26.979	1.17	104		49.8		
40	40/41/71	28.370	0.75	11700		49.8		
41	40/41/71	28.370	0.75	(11700)		49.8		
42		27.817	0.76	6530		49.8		
43		26.375	0.75	739		49.8		
44	44/47/65	27.230	0.77	32900		59.8		
45	45/51	23.994	0.75	3750		49.8		
46		24.329	0.75	1130		49.8		
47	44/47/65	27.230	0.77	(32900)		59.8		
48		26.979	0.77	4250		49.8		
-						-		

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl **Sample Analysis Results**

Client Sample ID Lab Sample ID Filename		PRF0543-05;FO 1075277005 P80711A_12	080768			
			D (1	Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
49	49/69	26.677	0.76	21900		49.8
50	50/53	23.189	0.75	4220		49.8
51	45/51	23.994	0.75	(3750)		49.8
52 53	50/53	26.106 23.189	0.76	71900		49.8 49.8
53 54	50/55	23.109	0.75	(4220) ND		49.8
55				ND		49.8
56		32.630	0.75	7010		49.8
57		30.433	0.41 I		121	49.8
58		30.668	1.12 I		59.3	49.8
59	59/62/75	27.616	0.74	1720		49.8
60		32.865	0.75	3880		49.8
61	61/70/74/76	31.573	0.74	47400		49.8
62	59/62/75	27.616	0.74	(1720)		49.8
63 64		31.205	0.76	720		49.8
64 65	44/47/65	28.655 27.230	0.76 0.77	12200 (32900)		49.8 59.8
66	44/47/03	31.926	0.73	17700		49.8
67		30.919	0.73	597		49.8
68		29.997	0.75	112		49.8
69	49/69	26.677	0.76	(21900)		49.8
70	61/70/74/76	31.573	0.74	(47400)		49.8
71	40/41/71	28.370	0.75	(11700)		49.8
72		29.678	0.76	183		49.8
73				ND		49.8
74	61/70/74/76	31.573	0.74	(47400)		49.8
75	59/62/75	27.616	0.74	(1720)		49.8
76 77	61/70/74/76	31.573 36.705	0.74 0.73	(47400) 1470		49.8 49.8
78			0.73	ND		49.8
79		34.978	0.76	433		49.8
80				ND		49.8
81		36.068	0.88	131		49.8
82		36.236	1.57	5520		49.8
83		34.290	1.56	2570		49.8
84		31.708	1.52	16400		49.8
85	85/116/117	35.733	1.56	8560		59.8
86	86/87/97/108/119/12		1.55	41900		99.7
87	86/87/97/108/119/12		1.55	(41900)		99.7
88 89	88/91	31.506 32.244	1.56 1.57	1010Ó 567		49.8 49.8
90	90/101/113	33.838	1.56	67500		49.8
91	88/91	31.506	1.56	(10100)		49.8
92		33.184	1.57	11900		49.8
93	93/98/100/102	30.936	1.54	2610		74.8
94		30.047	1.60	374		49.8
95		30.534	1.55	57400		49.8
96		27.532	1.62	498		49.8

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-05;FO 1075277005 P80711A_12	080768			
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/12		1.55	(41900)		99.7
98	93/98/100/102	30.936	1.54	(2610)		74.8
99		34.458	1.55	30100		49.8
100	93/98/100/102	30.936	1.54	(2610)		74.8
101	90/101/113	33.838	1.56	(67500)		49.8
102	93/98/100/102	30.936	1.54	(2610)		74.8
103		29.829	1.49	449		49.8
104				ND 22400		49.8
105 106		40.412	1.49	23400 ND		49.8
106	107/124			2050		49.8 49.8
107	86/87/97/108/119/12	38.467 5 35.045	1.53 1.55	(41900)		49.8 99.7
108	80/87/97/108/119/12	38.718	1.55	3170		49.8
110	110/115	35.934	1.55	60300		49.8
111	110/113			ND		49.8
112				ND		49.8
113	90/101/113	33.838	1.56	(67500)		49.8
114	00,101,110	39.741	1.55	1400		49.8
115	110/115	35.934	1.55	(60300)		49.8
116	85/116/117	35.733	1.56	(8560)		59.8
117	85/116/117	35.733	1.56	(8560)		59.8
118		39.204	1.50	5270Ó		49.8
119	86/87/97/108/119/12	5 35.045	1.55	(41900)		99.7
120				ŇĎ		49.8
121				ND		49.8
122		39.523	1.58	524		49.8
123		38.852	1.58	859		49.8
124	107/124	38.467	1.53	(2050)		49.8
125	86/87/97/108/119/12		1.55	(41900)		99.7
126		43.733	1.56	769		49.8
127		42.056	1.45	182		49.8
128	128/166	43.733	1.24	7450		99.7
129	129/138/163	42.441	1.23	47000		49.8
130		41.770	1.26	3130		49.8
131		38.735	1.33	1030		49.8
132		39.221	1.25	17100		49.8
133	124/142	39.842	1.27 1.25	558		49.8
134 135	134/143 135/151	38.114	1.25	2750 12600		49.8 50.8
135	155/151	36.940 34.274	1.20	6670		49.8
130		41.988	1.24	2640		49.8
137	129/138/163	42.441	1.19	(47000)		49.8
139	139/140	38.550	1.23	1220		49.8
140	139/140	38.550	1.21	(1220)		49.8
141		41.351	1.23	6980		49.8
142				ND		49.8
143	134/143	38.114	1.25	(2750)		49.8
144		37.477	1.30	540		49.8

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

ND = Not Detected



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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-05;FO 080768 1075277005 P80711A_12				
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145				ND		49.8
146		40.513	1.23	5200		49.8
147	147/149	37.913	1.24	35100		49.8
148				ND		49.8
149	147/149	37.913	1.24	(35100)		49.8
150		33.939	1.30	75.9		49.8
151	135/151	36.940	1.28	(12600)		50.8
152		33.721	1.40	79.8		49.8
153	153/168	41.167	1.25	30000		59.8
154		37.225	1.27	372		49.8
155				ND		49.8
156	156/157	46.785	1.22	8640		49.8
157	156/157	46.785	1.22	(8640)		49.8
158		42.861	1.25	5000		49.8
159				ND		49.8
160				ND		49.8
161				ND		49.8
162		45.141	1.27	299		49.8
163	129/138/163	42.441	1.23	(47000)		49.8
164		42.106	1.24	3260		49.8
165				ND		49.8
166	128/166	43.733	1.24	(7450)		99.7
167		45.628	1.22	2130		49.8
168	153/168	41.167	1.25	(30000)		59.8
169		50.189	1.57 I		61.8	49.8
170		49.468	1.02	4290		49.8
171	171/173	45.812	1.05	1820		49.8
172		47.540	0.98	746		49.8
173	171/173	45.812	1.05	(1820)		49.8
174		44.705	1.01	5090		49.8
175		43.565	1.08	240		49.8
176		40.932	1.05	688		49.8
177		45.158	1.03	2620		49.8
178		42.911	1.04	876		49.8
179		40.009	1.04	2140		49.8
180	180/193	48.210	1.03	7980		49.8
181		45.594	1.01	135		49.8
182	100/105			ND		49.8
183	183/185	44.504	1.05	3380		49.8
184	400/405			ND		49.8
185	183/185	44.504	1.05	(3380)		49.8
186				ND		49.8
187		43.850	1.05	4820		49.8
188				ND		49.8
189		52.707	1.08	321		49.8
190		50.021	1.05	761		49.8
191		48.562	1.12	172 ND		49.8
192				ND		49.8

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected NA = Not Applicable NC = Not Calculated *= See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PRF0543-05;FO 1075277005 P80711A_12	080768			
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	48.210	1.03	(7980)		49.8
194		54.776	0.87	`164Ó		49.8
195		52.383	0.95	570		49.8
196		50.843	0.93	795		69.8
197	197/200	47.238	0.86	347		249
198	198/199	50.172	0.88	2060		49.8
199	198/199	50.172	0.88	(2060)		49.8
200	197/200	47.238	0.86	`(347)		249
201		46.231	0.82	`316		49.8
202		45.276	0.90	533		49.8
203		51.061	0.87	1230		49.8
204				ND		49.8
205				ND		49.8
206		56.974	0.82	1650		49.8
207		53.051	0.77	202		49.8
208		52.125	0.76	415		49.8
209		58.548	0.78	551		49.8

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level P = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	PRF0543-05;FO 080768
Lab Sample ID	1075277005
Filename	P80711A_12

Congener Group	Concentration ng/Kg	
Total Monochloro Biphenyls	755	
Total Dichloro Biphenyls	13700	
Total Trichloro Biphenyls	70300	
Total Tetrachloro Biphenyls	253000	
Total Pentachloro Biphenyls	402000	
Total Hexachloro Biphenyls	200000	
Total Heptachloro Biphenyls	36100	
Total Octachloro Biphenyls	7490	
Total Nonachloro Biphenyls	2270	
Decachloro Biphenyls	551	
Total PCBs	985000	

ND = Not Detected Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename Injected By Total Amount Extracted ICAL ID CCal Filename(s)	BLANK-16 P80708A_ SMT 10.2 g P80708A10 P80708A_0	13 D		Matrix Extracted Analyzed Dilution	Solid 06/30/2008 07/08/2008 2 NA	3:11
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-4-MoCB 13C-2,2'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6,6'-TeCB 13C-3,4,4'-5-TeCB 13C-2,3',4,4'-TeCB 13C-2,3',4,4'-FeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,3',5,5',6,6'-OcCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB		$\begin{array}{c} 8.438\\ 11.817\\ 12.189\\ 20.206\\ 16.611\\ 28.543\\ 20.544\\ 35.906\\ 36.510\\ 27.151\\ 40.166\\ 39.512\\ 38.959\\ 38.623\\ 43.369\\ 33.474\\ 46.455\\ 45.298\\ 49.759\\ 39.512\\ 52.322\\ 45.030\\ 54.909\\ 56.655\\ 51.826\\ 58.272\end{array}$	$\begin{array}{c} 2.90\\ 2.96\\ 1.58\\ 1.46\\ 1.07\\ 1.01\\ 0.79\\ 0.74\\ 0.76\\ 1.60\\ 1.53\\ 1.52\\ 1.51\\ 1.50\\ 1.52\\ 1.27\\ 1.22\\ 1.20\\ 1.20\\ 1.20\\ 1.07\\ 1.01\\ 0.92\\ 0.88\\ 0.79\\ 0.81\\ 0.71\end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 0.883\\ 0.826\\ 1.01\\ 1.32\\ 1.30\\ 1.69\\ 1.45\\ 1.58\\ 1.57\\ 1.77\\ 1.59\\ 1.37\\ 1.60\\ 1.67\\ 1.54\\ 1.92\\ 2.78\\ 1.42\\ 1.21\\ 2.90\\ 2.20\\ 2.76\\ 2.14\\ 2.17\\ 2.21\\ 2.25\end{array}$	44 41 50 66 65 85 73 79 78 88 79 68 80 84 77 96 69 71 61 145 110 138 107 109 111
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	23.931 36.594 42.665	1.00 1.59 1.06	2.0 2.0 2.0	1.65 1.76 1.65	82 88 82
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	15.269 26.078 33.709 42.179 54.435	1.50 0.78 1.62 1.26 0.91	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level P = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a total weight basis

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion ! = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-16815 P80708A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1				ND		49.1
				ND		49.1
2 3 4				ND		49.1
4				ND		49.1
5				ND		49.1
5 6				ND		49.1
7				ND		49.1
8				ND		49.1
9				ND		49.1
10				ND		49.1
11		19.463	1.44	186		58.9
12	12/13			ND		49.1
13	12/13			ND		49.1
14				ND		49.1
15				ND		49.1
16				ND		49.1
17				ND		49.1
18	18/30	19.067	1.03	57.3		49.1
19				ND		49.1
20	20/28	23.965	0.94	78.7		58.9
21	21/33			ND		49.1
22				ND		49.1
23				ND		49.1
24				ND		49.1
25				ND		49.1
26	26/29			ND		49.1
27	00/00			ND		49.1
28	20/28	23.965	0.94	(78.7)		58.9
29	26/29) NĎ		49.1
30	18/30	19.067	1.03	(57.3)		49.1
31				ŇĎ		49.1
32	04/00			ND		49.1
33	21/33			ND		49.1
34				ND		49.1
35				ND		49.1
36 37				ND ND		49.1 49.1
						49.1
38 39				ND ND		49.1
39 40	40/41/71			ND		49.1
40 41	40/41/71			ND		49.1
41	40/41/71			ND		49.1
42 43				ND		49.1
43 44	44/47/65			ND		49.1 58.9
44 45	45/51			ND		49.1
40	4 0/01					43.1

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a total weight basis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

*! = See Discussion

! = Outside QC Limits

RT = Retention Time

I = Interference

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-16815 P80708A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
46				ND		49.1
40	44/47/65			ND		58.9
48	44/47/03			ND		49.1
49	49/69			ND		49.1
50	50/53			ND		49.1
51	45/51			ND		49.1
52	10/01			ND		49.1
53	50/53			ND		49.1
54				ND		49.1
55				ND		49.1
56				ND		49.1
57				ND		49.1
58				ND		49.1
59	59/62/75			ND		49.1
60				ND		49.1
61	61/70/74/76			ND		49.1
62	59/62/75			ND		49.1
63				ND		49.1
64				ND		49.1
65	44/47/65			ND		58.9
66				ND		49.1
67				ND		49.1
68				ND		49.1
69	49/69			ND		49.1
70	61/70/74/76			ND		49.1
71	40/41/71			ND		49.1
72				ND		49.1
73				ND		49.1
74	61/70/74/76			ND		49.1
75	59/62/75			ND		49.1
76	61/70/74/76			ND		49.1
77				ND		49.1
78				ND		49.1
79				ND		49.1
80				ND		49.1
81				ND		49.1
82				ND		49.1
83				ND		49.1
84	05/440/447			ND		49.1
85	85/116/117			ND		58.9
86	86/87/97/108/119/125			ND		98.2
87	86/87/97/108/119/125			ND		98.2
88	88/91			ND		49.1
89	00/101/112			ND		49.1
90	90/101/113			ND		49.1

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a total weight basis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

*! = See Discussion

! = Outside QC Limits

RT = Retention Time

I = Interference

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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-16815 P80708A_13

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
91	88/91			ND		49.1
92				ND		49.1
93	93/98/100/102			ND		73.7
94				ND		49.1
95				ND		49.1
96				ND		49.1
97	86/87/97/108/119/125			ND		98.2
98	93/98/100/102			ND		73.7
99				ND		49.1
100	93/98/100/102			ND		73.7
101	90/101/113			ND		49.1
102	93/98/100/102			ND		73.7
103				ND		49.1
104				ND		49.1
105				ND		49.1
106				ND		49.1
107	107/124			ND		49.1
108	86/87/97/108/119/125			ND		98.2
109				ND		49.1
110	110/115			ND		49.1
111				ND		49.1
112				ND		49.1
113	90/101/113			ND		49.1
114				ND		49.1
115	110/115			ND		49.1
116	85/116/117			ND		58.9
117	85/116/117			ND		58.9
118				ND		49.1
119	86/87/97/108/119/125			ND		98.2
120				ND		49.1
121				ND		49.1
122				ND		49.1
123				ND		49.1
124	107/124			ND		49.1
125	86/87/97/108/119/125			ND		98.2
126				ND		49.1
127				ND		49.1
128	128/166			ND		98.2
129	129/138/163			ND		49.1
130				ND		49.1
131				ND		49.1
132				ND		49.1
133				ND		49.1
134	134/143			ND		49.1
135	135/151			ND		50.1

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a total weight basis

ND = Not Detected NA = Not Applicable

NC = Not Calculated

*! = See Discussion

! = Outside QC Limits

RT = Retention Time

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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-16815 P80708A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
136				ND		49.1
130				ND		49.1
138	129/138/163			ND		49.1
139	139/140			ND		49.1
140	139/140			ND		49.1
140	139/140			ND		49.1
142				ND		49.1
142	134/143			ND		49.1
143	134/143			ND		49.1
144				ND		49.1
145				ND		49.1
140	147/149			ND		49.1
147	147/149			ND		49.1
140	147/149			ND		49.1
149	147/149			ND		49.1
150	105/151					49.1 50.1
	135/151			ND		
152	450/400			ND		49.1
153	153/168			ND		58.9
154				ND		49.1
155				ND		49.1
156	156/157			ND		49.1
157	156/157			ND		49.1
158				ND		49.1
159				ND		49.1
160				ND		49.1
161				ND		49.1
162				ND		49.1
163	129/138/163			ND		49.1
164				ND		49.1
165				ND		49.1
166	128/166			ND		98.2
167				ND		49.1
168	153/168			ND		58.9
169				ND		49.1
170				ND		49.1
171	171/173			ND		49.1
172				ND		49.1
173	171/173			ND		49.1
174				ND		49.1
175				ND		49.1
176				ND		49.1
177				ND		49.1
178				ND		49.1
179				ND		49.1
180	180/193			ND		49.1

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

P = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a total weight basis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

*! = See Discussion

! = Outside QC Limits

RT = Retention Time

I = Interference

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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-16815 P80708A_13

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
181				ND		49.1
182				ND		49.1
183	183/185			ND		49.1
184				ND		49.1
185	183/185			ND		49.1
186				ND		49.1
187				ND		49.1
188				ND		49.1
189				ND		49.1
190				ND		49.1
191				ND		49.1
192				ND		49.1
193	180/193			ND		49.1
194				ND		49.1
195				ND		49.1
196				ND		68.8
197	197/200			ND		246
198	198/199			ND		49.1
199	198/199			ND		49.1
200	197/200			ND		246
201				ND		49.1
202				ND		49.1
203				ND		49.1
204				ND		49.1
205				ND		49.1
206				ND		49.1
207				ND		49.1
208				ND		49.1
209				ND		49.1

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

- B = Less than 10 times higher than method blank level
- P = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a total weight basis

REPORT OF LABORATORY ANALYSIS

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ND = Not Detected NA = Not Applicable NC = Not Calculated *! = See Discussion ! = Outside QC Limits RT = Retention Time

I = Interference



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Method 1668A Polychlorobiphenyl Blank Analysis Results

BLANK-16815 P80708A_13

Congener Group	Concentration ng/Kg	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	186	
Total Trichloro Biphenyls	136	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
Decachloro Biphenyls	ND	
Total PCBs	322	

ND = Not Detected Results reported on a total weight basis

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-16816
Filename	P80708A_11
Total Amount Extracted	10.2 g
ICAL ID	P80708A10
CCal Filename(s)	P80708A_09
Method Blank ID	BLANK-16815

MatrixSolidDilutionNAExtracted06/30/2008Analyzed07/08/2008Injected BySMT

	Native Analytes			Labeled Analytes			
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery	
1	1.0	1.06	106	2.0	1.21	60	
3	1.0	1.07	107	2.0	1.10	55	
4	1.0	1.16	116	2.0	1.31	65	
15	1.0	1.21	121	2.0	1.59	79	
19	1.0	1.14	114	2.0	1.63	81	
37	1.0	1.30	130	2.0	1.73	86	
54	1.0	1.08	108	2.0	1.66	83	
81	1.0	1.06	106	2.0	1.62	81	
77	1.0	1.09	109	2.0	1.56	78	
104	1.0	1.10	110	2.0	1.88	94	
105	1.0	1.11	111	2.0	1.70	85	
114	1.0	1.04	104	2.0	1.49	74	
118	1.0	1.14	114	2.0	1.73	86	
123	1.0	1.01	101	2.0	1.76	88	
126	1.0	1.01	101	2.0	1.59	80	
155	1.0	1.12	112	2.0	1.73	87	
156/157	2.0	2.09	104	4.0	2.51	63	
167	1.0	0.954	95	2.0	1.30	65	
169	1.0	1.13	113	2.0	1.05	53	
188	1.0	1.10	110	2.0	3.22	161 P	
189	1.0	1.16	116	2.0	1.99	99	
202	1.0	1.14	114	2.0	2.76	138	
205	1.0	1.09	109	2.0	2.09	105	
206	1.0	1.11	111	2.0	2.05	103	
208	1.0	1.17	117	2.0	2.01	101	
209	1.0	1.11	111	2.0	2.13	106	

P = Recovery outside of method 1668A control limits ND = Not Detected NA = Not Applicable NC = Not Calculated ! = See Discussion

ng = Nanograms

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyls Matrix Spike Analysis Results

Client - Test America

Lab Sample ID	1075277005-MS		
Filename	P80711A_13	Matrix	Solid
Total Amount Extracted	21.1 g	Dilution	NA
ICAL ID	P80711A05	Extracted	06/30/2008
CCal Filename(s)	P80711A_04	Analyzed	07/12/2008 00:11
Method Blank ID	BLANK-16815	Injected By	BAL

	Native Analytes			Labeled Analytes			
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recove	ry
1	1.0	5.52	552	2.0	0.236	12	Р
3	1.0	4.33	433	2.0	0.446	22	Ρ
4	1.0	9.68	968	2.0	0.385	19	Ρ
15	1.0	35.2	3522	2.0	1.27	64	
19	1.0	8.01	801	2.0	0.648	32	
37	1.0	35.7	3566	2.0	1.25	63	
54	1.0	1.30	130	2.0	0.881	44	
81	1.0	1.53	153	2.0	0.854	43	
77	1.0	13.1	1312	2.0	0.755	38	
104	1.0	1.15	115	2.0	1.69	85	
105	1.0	217	21691	2.0	0.827	41	
114	1.0	14.2	1424	2.0	0.804	40	
118	1.0	475	47529	2.0	0.979	49	
123	1.0	11.9	1190	2.0	1.00	50	
126	1.0	7.31	731	2.0	0.643	32	
155	1.0	1.10	110	2.0	2.33	116	
156/157	2.0	86.3	4317	4.0	1.87	47	
167	1.0	19.0	1903	2.0	1.03	52	
169	1.0	1.54	154	2.0	0.600	30	
188	1.0	1.20	120	2.0	4.98	249	Ρ
189	1.0	3.71	371	2.0	1.83	92	
202	1.0	5.23	523	2.0	3.55	178	Ρ
205	1.0	1.40	157	2.0	1.47	74	
206	1.0	9.54	954	2.0	1.25	62	
208	1.0	4.08	408	2.0	1.89	95	
209	1.0	4.59	459	2.0	0.897	45	

P = Recovery outside of method 1668A control limits ND = Not Detected NA = Not Applicable NC = Not Calculated ! = See Discussion

ng = Nanograms

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyls Matrix Spike Analysis Results

Client - Test America

Lab Sample ID	1075277005-MSD		
Filename	P80711A_14	Matrix	Solid
Total Amount Extracted	21.1 g	Dilution	NA
ICAL ID	P80711A05	Extracted	06/30/2008
CCal Filename(s)	P80711A_04	Analyzed	07/12/2008 01:14
Method Blank ID	BLANK-16815	Injected By	BAL

	N	lative Analy	tes	Labeled Analytes			
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recove	ry
1	1.0	3.13	313	2.0	0.231	13	Ρ
3	1.0	4.52	452	2.0	0.468	23	Ρ
4	1.0	11.1	1114	2.0	0.439	22	Ρ
15	1.0	43.4	4344	2.0	1.22	61	
19	1.0	9.99	999	2.0	0.650	32	
37	1.0	44.6	4459	2.0	1.26	63	
54	1.0	1.48	148	2.0	0.858	43	
81	1.0	2.02	202	2.0	0.750	37	
77	1.0	18.4	1844	2.0	0.661	33	
104	1.0	1.12	112	2.0	1.98	99	
105	1.0	517	51693	2.0	0.842	42	
114	1.0	31.3	3127	2.0	0.840	42	
118	1.0	1080	108318	2.0	1.05	53	
123	1.0	23.9	2389	2.0	1.03	51	
126	1.0	8.65	865	2.0	0.687	34	
155	1.0	0.950	95	2.0	2.31	116	
156/157	2.0	197	9866	4.0	2.01	50	
167	1.0	44.7	4467	2.0	1.17	59	
169	1.0	2.02	202	2.0	0.650	33	
188	1.0	1.32	132	2.0	4.85	242	Р
189	1.0	6.43	643	2.0	2.12	106	
202	1.0	7.33	733	2.0	3.48	174	Р
205	1.0	1.50	167	2.0	1.48	74	
206	1.0	11.7	1168	2.0	1.26	63	
208	1.0	4.23	423	2.0	2.01	100	
209	1.0	5.65	565	2.0	1.00	50	

P = Recovery outside of method 1668A control limits ND = Not Detected NA = Not Applicable NC = Not Calculated

! = See Discussion

ng = Nanograms

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P8071	ca 1A_12 1A_13 1A_14	Dry We Sample MS Am MSD A Backgrou	Amount 10.0 g ount 10.0 g mount 10.0 g]
P8071 P8071 MSD Qm	1A_13	Sample MS Am MSD A	Amount 10.0 g ount 10.0 g mount 10.0 g]
P8071 P8071 MSD Qm	1A_13	MS Ám MSD Ai	ount 10.0 g mount 10.0 g]
P8071 MSD Qm		MSD A	mount 10.0 g	
MSD Qm			-)
			по зоопастео	
	RPD	MS % Rec.	MSD % Rec.	RPD
3.13	55.2	379	140	92.1
4.52	4.3	34	53	43.3
11.14	14.0	0	146	200.0
43.44	20.9	0	154	200.0
9.99	22.0	43	241	139.3
44.59	22.3	0	403	200.0
1.48	12.6	96	113	16.8
18.44	33.7	0	369	200.0
2.02	27.3		70	105.1
1.12	1.9	115	112	1.9
516.93	81.8	0	28265	200.0
31.27	74.9	27	1731	193.9
1083.18	78.0	0	55579	200.0
23.89		330	1529	128.9
8.65	16.7	0	95	200.0
0.95	14.7	106	91	15.3
197.32	78.3	0	5544	200.0
44.67	80.5	0	2334	200.0
2.02	26.9	92	140	41.3
1.32	10.0	120	132	10.0
6.43	53.8	50	322	146.7
7.33	33.4	0	200	200.0
1.50	6.8	140	150	6.8
11.68		0	0	0.0
4.23				200.0
5.65	20.6	0	13	200.0
	$\begin{array}{c} 3.13\\ 4.52\\ 11.14\\ 43.44\\ 9.99\\ 44.59\\ 1.48\\ 18.44\\ 2.02\\ 1.12\\ 516.93\\ 31.27\\ 1083.18\\ 23.89\\ 8.65\\ 0.95\\ 197.32\\ 44.67\\ 2.02\\ 1.32\\ 6.43\\ 7.33\\ 1.50\\ 11.68\\ 4.23\end{array}$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

Definitions

MS = Matrix Spike MSD = Matrix Spike Duplicate

Qm = Quantity Measured Qs = Quantity Spiked

% Rec. = Percent Recovery

RPD = Relative Percent Difference NA = Not Applicable



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Laboratory Data QA/QC Review Inline Solids Investigation City Outfall Basin 53A

To:FileFrom:Andrew Davidson, GSI Water Solutions, Inc. (GSI)Date:November 11, 2010

This memorandum presents a quality assurance/quality control (QA/QC) review of the laboratory data generated from a source control investigation sampling event conducted by the City of Portland (City) in September 2010. One inline solids sample (FO105880) was collected in City Outfall Basin 53A on September 8, 2010.

The laboratory analyses for this source control program sample were completed by the City's Bureau of Environmental Services (BES) Water Pollution Control Laboratory (WPCL) and subcontracted laboratories. The following laboratories conducted the analyses listed:

- BES WPCL
 - o Total Solids SM 2540G
 - o Polychlorinated Biphenyls (PCBs) Aroclors EPA 8082
 - o Metals EPA 6020
- Test America (TA)
 - o Total Organic Carbon (TOC) EPA 9060 MOD
- Pace Analytical Services (Pace)
 - PCB Congeners EPA 1668A

The WPCL summary report and the subcontracted laboratory reports for all analyses associated with this sampling event are attached. The WPCL summary report comments that unless otherwise noted, all analytical QA/QC criteria were met for these samples including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

The following QA/QC review of the analytical data is based on the available documentation provided by the subcontracted laboratories and on exceptions noted in the WPCL summary

report. The QA/QC review of the analytical data consisted of reviewing the following elements for each laboratory report, if applicable and/or available:

- Chain-of-custody for completeness and continuous custody
- Analysis conducted within holding times
- Chemicals of interest detected in method blanks
- Surrogate recoveries within laboratory control limits
- Internal standard recoveries within accuracy control limits
- Matrix spike and matrix spike duplicate (MS/MSD) sample results within laboratory control limits
- Laboratory control and duplicate laboratory control (LC/DLC) sample recoveries within laboratory control limits

The results of the QA/QC review of the subcontracted laboratory reports are presented below.

Chain-of-Custody

The chain-of-custody forms showed continuous custody of the samples. The chain-of-custody procedures appear to have been adequate indicating that sample integrity was maintained throughout the sample collection and delivery process.

Analysis Holding Times

Samples for all analyses were extracted and analyzed within the recommended method-specific holding times.

Method Blanks

Method blanks were processed during the subcontracted laboratory analyses of PCB congeners and TOC. No analytes were detected in the method blanks for either analysis.

Internal Standard Recoveries

Isotopically-labeled internal standard recoveries were processed during the laboratory analysis of PCB congeners. Internal standard recoveries are within control limits with three exceptions in the QC samples, which are flagged "R" in the subcontracted laboratory report.

Interfering background constituents impacted the measurement of some PCB congeners. The affected values are flagged "I" in the subcontracted report to indicate that incorrect isotope ratios were obtained, and an estimated maximum possible concentration (EMPC) is provided. These values are not included in the total homolog and total PCB values.

Laboratory Control Samples

LC and DLC samples were processed during the laboratory analysis of PCB congeners. A LC sample was processed during the TOC analysis. All LC and DLC sample recoveries and relative percent differences were within method-specified control limits.

Other

WPCL reports that quantification of Aroclor 1248 is based on only 2 chromatographic peaks due to matrix interference. Accordingly, the concentration is flagged "EST" (estimated) on the WPCL report.



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

LABORATORY ANALYSIS REPORT



Sample ID: FO10	5880	Sample Collected: 09/08/10 Sample Received: 09/08/10	14:45	Sample Status:	COMPLETE AND VALIDATED
Proj./Company Name: Address/Location:	PORTLANI	D HARBOR INLINE SAMP 913-0910		Report Page:	Page 1 of 1
/ (dd/ 000/ m0000.01/)	10001 N RIV			System ID:	AO08009
Sample Point Code: Sample Type: Sample Matrix:	53A_7 COMPOSITE SEDIMENT	Ξ		EID File # : LocCode: Collected By:	1020.001 PORTHARI AJA/PTB

Comments:

QA/QC: Except as follows, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. Quantification of PCB Aroclor 1248 is based on only 2 chromatographic peaks due to matrix interferences.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	83.0	% W/W	0.01	SM 2540 G	09/10/10
METALS					
ARSENIC	2.02	mg/Kg dry wt	0.50	EPA 6020	09/10/10
CADMIUM	0.69	mg/Kg dry wt	0.10	EPA 6020	09/10/10
CHROMIUM	628	mg/Kg dry wt	0.50	EPA 6020	09/10/10
COPPER	107	mg/Kg dry wt	0.25	EPA 6020	09/10/10
LEAD	56.8	mg/Kg dry wt	0.10	EPA 6020	09/10/10
MANGANESE	4620	mg/Kg dry wt	0.5	EPA 6010	09/10/10
MERCURY	0.019	mg/Kg dry wt	0.010	EPA 6020	09/10/10
NICKEL	51.2	mg/Kg dry wt	0.25	EPA 6020	09/10/10
SILVER	0.17	mg/Kg dry wt	0.10	EPA 6020	09/10/10
ZINC	305	mg/Kg dry wt	0.50	EPA 6020	09/10/10
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PO	CB)				
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	09/16/10
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1248	EST 51	µg/Kg dry wt	.10	EPA 8082	09/16/10
Aroclor 1254	34	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1260	<10	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	09/16/10
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	7090	mg/Kg dry wt	100	EPA 9060 MOD	09/16/10
POLYCHLORINATED BIPHENYL CON	•				00/00/110
Refer to Contract Report	Completed	ng/Kg dry wt		EPA 1668 MOD	09/29/10

End of Report for Sample ID: FO105880



ORELAP#: OR100021

September 24, 2010

Jennifer Shackelford City of Portland Water Pollution Laboratory 6543 N. Burlington Ave. Portland, OR 97203

RE: Portland Harbor Inline

Enclosed are the results of analyses for samples received by the laboratory on 09/09/10 16:05. The following list is a summary of the Work Orders contained in this report, generated on 09/24/10 14:33.

If you have any questions concerning this report, please feel free to contact me.

Work OrderProjectProjectNumberPTI0296Portland Harbor InlineBasin 53A

TestAmerica Portland

Uh el W. Amil

Darrell Auvil, Project Manager



THE LEADER IN ENVIRONMENTAL TESTING

City of Portland Water Pollution Laboratory

6543 N. Burlington Ave. Portland, OR 97203 Project Name: Project Number: Project Manager: **Portland Harbor Inline** Basin 53A Jennifer Shackelford

Report Created: 09/24/10 14:33

ANALYTICAL REPORT FOR SAMPLES Sample ID Laboratory ID Matrix Date Sampled Date Received F0105880 PTI0296-01 Soil 09/08/10 14:45 09/09/10 16:05

TestAmerica Portland

Charle W. Amil

Darrell Auvil, Project Manager



City of Portland Water Pollution Laboratory

6543 N. Burlington Ave. Portland, OR 97203

Project Name: Project Number: Project Manager:

Portland Harbor Inline Basin 53A

Jennifer Shackelford

Report Created: 09/24/10 14:33

Organic Carbon, Total (TOC) TestAmerica Connecticut										
Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PT10296-01 (FO105880) Soil					Sampled: 09/08/10 14:45					
Total Organic Carbon -	9060	7090	30.0	100	mg/Kg	1x	42822	09/16/10 22:11	09/16/10 22:11	

Duplicates

TestAmerica Portland

Darrell Auvil, Project Manager



City of Portland Water Pollution Laboratory

6543 N. Burlington Ave. Portland, OR 97203 Project Name: Project Number: Project Manager:

Portland Harbor Inline Basin 53A

Jennifer Shackelford

Report Created:

09/24/10 14:33

Organic Carbon, Total (TOC) - Laboratory Quality Control Results TestAmerica Connecticut									
QC Batch: 42822	Soil Pre	paration Met	hod: NA						
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike % (Limits) % (Limits) Analyzed Note Amt REC RPD	
LCS (220-42822-6)				QC Source:				Extracted: 09/16/10 18:25	
Total Organic Carbon - Duplicates	9060	5134	30.0	100	mg/Kg	1x		4110 125% (28-172) 09/16/10 18:25	
Blank (220-42822-7)				QC Source:				Extracted: 09/16/10 18:32	
Total Organic Carbon - Duplicates	9060	ND	30.0	100	mg/Kg	1x		09/16/10 18:32	

TestAmerica Portland

And W. Amil

Darrell Auvil, Project Manager



City of Portland Water Pollution Laboratory

6543 N. Burlington Ave. Portland, OR 97203 Project Name: Project Number: Project Manager: **Portland Harbor Inline** Basin 53A

Jennifer Shackelford

Report Created: 09/24/10 14:33

Notes and Definitions

Report Specific Notes:

None

Laboratory Reporting Conventions:

- DET Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA _ Not Reported / Not Available
- dry Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet
 Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL* METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B.
 *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
- Electronic
 Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*.

 Signature
 Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory.

 Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Portland

and W. Amil

CERTIFICATION SUMMARY

Subcontracted Laboratories

Pace Analytical Services, Inc - Minneapolis

1700 Elm Street Suite 200 - Minneapolis, MN 55414

Analysis Performed: 1668 PCB 209 Congeners - SUB

Samples: PTI0296-01

TestAmerica Connecticut

128 Long Hill Cross Road - Shelton, CT 06484

Method Performed: 9060

Samples: PTI0296-01

TestAmerica Portland

Quel W. Amil

Darrell Auvil, Project Manager

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11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 11922 E. First Ave, Spokane, WA 99206-5302

TAL-1000(0408) TA WO ID * Turnaround Requests less than standard may incur Rush Charges 425-420-9200 FAX 420-9210 509-924-9200 FAX 924-9290 503-906-9200 FAX 906-9210 907-563-9200 FAX 563-9210 D ī PAGE OF 10296 Organic & Inorganic Analyses 7 5 4 3 2 1 | Petroleum Hydrocarbon Analyses 3 2 1 <1 DATE: **TURNAROUND REQUEST** TIME: / DATE TIME LOCATION/ COMMENTS in Business Days * OTHER Specify: Work Order #: 5 4 MATRIX # OF (W, S, O) CONT. 2 FIRM 9405 SW Nimbus Ave, Beaverton, OR 97008-7145 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 FIRM: \mathcal{O} CHAIN OF CUSTODY REPORT RECEIVED BY: Charles Lythe PRINT NAME: RECEIVED BY PRINT NAME **REQUESTED ANALYSES** PRESERVATIVE P.O. NUMBER: 3 6 238 19/10 -FIRME ("ty of Point and TIME 13" INVOICE TO: DATE: 9 TIME Sungers X # Send to PAUE 60R. 14 X THE LEADER IN ENVIRONMENTAL TESTING City of Portland Chackelford Portland Harbor Inline 14 L SAMPLING DATE/TIME Basin 53A ک ۲ آ 9/8/10 FAX: Plan F0105880 CLIENT SAMPLE IDENTIFICATION PROJECT NAME: PROJECT NUMBER: ADDITIONAL REMARK SAMPLED BY: RELEASED BY: A RELEASED BY: REPORT TO: ADDRESS: PRINT NAME: PRINT NAME: CLIENT: PHONE: 01

					America Po Receiving		list		
Work Clien			PT102 d Project:C	96 I 1740	Pate/Time F	Received: Hand	9/9/1	0 11	105
Time ED	Zone: T/EST		CDT/CST		MST PI	DT/PST	AK	OTHEF	{
· Coc	oler #(s erature	es:07	L		Glass)		Tempe	Not enou Ice Melt	ut of Range: agh or No Ice ed Hrs of collection
N/A	Yes	No	÷					In	itials:
		1	1. If ESI clien	t, were temp	blanks receiv	ed? If no, d	ocument or	n NOD.	V
		2. Cooler Seals intact? (N/A if hand delivered) if no, document on NOD.							
	3. Chain of Custody present? If no, document on NOD.								
		4	4. Bottles rece	vived intact?	If no, docum	ent on NOE) .		
			5. Sample is r	ot multiphas	ic? If no, doc	ument on N	IOD.		
			6. Proper Con	tainer and pr	eservatives us	sed? If no,	document o	on NOD.	• •
\square			7. pH of all sa	mples check	ed and meet r	equirement	s? If no, do	ocument or	n NOD.
		8. Cyanide samples checked for sulfides and meet requirements? If no, notify PM.							notify PM.
			9. HF Dilutio	n required?					
			10. Sufficient		vided for all a	nalysis? If	no, docume	ent on NOI	O and consult
			PM before pro 11. Did chain	ceeding. of custody a	gree with san	uples receiv	ed? If no.	document	on NOD.
			12. Is the "Sar						
A		_	13. Were VO						
			14. Were VO	• -				e 🗌 Ascor	bic Acid
لينبع		1 A A	15. Did samp						
F			16. If yes to #	• •				, documen	t on NOD.
			-						ment on NOD.
									x duplicates? If
	Í 🗆		no, document 19. Are analy	on NOD and	contact PM	before proc	eeding.		
	Z		20. Was Star	dard Turn A	round (TAT)	requested?			
		í 🗆	21. Receipt d	ate(s) < 48 ho	ours past the c	collection da	ate(s)? If n	o, notify P	M.

and i

F:\Sample_Receiving\Receiving_Documents\Forms (effective 3/16/09)

TestAmerica Portland Sample Receiving Checklist

PT10296 Work Order #:____

Login Checks:

Initials:

N

Initials:

N/A	Yes	No	
	Z		22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM.
Z			23. Sufficient volume provided for client requested MS/MSD or matrix duplicates? If
			no, document on NOD and contact PM.
			24. Did the chain of custody include "received by" and "relinquished by" signatures,
			dates and times?
			25. Were special log in instructions read and followed?
	Z		26. Were tests logged checked against the COC?
Z,			27. Were rush notices printed and delivered?
			28. Were short hold notices printed and delivered?
			29. Were subcontract COCs printed?
			30. Was HF dilution logged?

Labeling and Storage Checks:

N/A	Yes	No	U
			31. Were the subcontracted samples/containers put in Sx fridge?
			32. Were sample bottles and COC double checked for dissolved/filtered metals?
	Z		33. Did the sample ID, Date, and Time from label match what was logged?
			34. Were Foreign sample stickers affixed to each container and containers stored in
	-		foreign fridge?
			35. Were HF stickers affixed to each container, and containers stored in Sx fridge?
			36. Was an NOD for created for noted discrepancies and placed in folder?

Document any problems or discrepancies and the actions taken to resolve them on a Notice of Discrepancy form (NOD).



www.pacelabs.com

Report Prepared for:

Darrell Auvil Test America 9405 SW Nimbus Avenue Beaverton OR 97008

REPORT OF LABORATORY ANALYSIS FOR PCBs

Report Prepared Date: October 12, 2010 Pace Analytical Services, Inc. 1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

Report Information:

Pace Project #: 10138003 Sample Receipt Date: 09/14/2010 Client Project #: Portland Harbor InlineB Client Sub PO #: N/A State Cert #: MN200001-005

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nate Habte, your Pace Project Manager.

This report has been reviewed by:

October 12, 2010 Nate Habte, Project Manager (612) 607-6407 (612) 607-6444 (fax) natnael.habte@pacelabs.com



Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.



Pace Analytical Services, Inc. 1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

DISCUSSION

This report presents the results from the analysis performed on one sample submitted by a representative of Test America - Portland. The sample was analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to approximately 25-75 parts per trillion and were adjusted for the amount of dry sample extracted.

The isotopically-labeled PCB internal standards in the sample extract were recovered at 57-84%. With three exceptions, flagged "R" on the QC results tables, the labeled internal standard recoveries obtained for the sample extract were within the target ranges specified in the method. Since the quantification of the native PCB congeners was based on internal standard and isotope dilution methodology, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, interfering substances impacted the determination of PCB congeners. The affected values were flagged "I" where incorrect isotope ratios were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank be free of PCB congeners at the reporting limits. This indicates that the sample preparation procedures did not significantly contribute to the levels determined for the field samples.

Laboratory spike samples were also prepared with the sample batch using a reference matrix that had been fortified with native standards. The results show that the spiked native compounds were recovered at 88-136% with relative percent differences of 0.0-10.8%. These results indicate high levels of accuracy and precision for these analyses. Matrix spikes were not prepared with the samples.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.



> Tel: 612-607-1700 Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
Alabama	40770	Montana	92
Alaska	MN00064	Nebraska	
Arizona	AZ0014	Nevada	MN000642010A
Arkansas	88-0680	New Jersey (NE	MN002
California	01155CA	New Mexico	MN00064
Colorado	MN00064	New York (NEL	11647
Connecticut	PH-0256	North Carolina	27700
EPA Region 5	WD-15J	North Dakota	R-036
EPA Region 8	8TMS-Q	Ohio	4150
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (DNR)	959	Oklahoma	D9922
Guam	09-019r	Oregon (ELAP)	MN200001-005
Hawaii	SLD	Oregon (OREL	MN200001-005
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennesee	2818
lowa	368	Tennessee	02818
Kansas	E-10167	Texas	T104704192-08
Kentucky	90062	Utah (NELAP)	PAM
Louisiana	LA0900016	Virginia	00251
Maine	2007029	Washington	C755
Maryland	322	West Virginia	9952C
Michigan	9909	Wisconsin	999407970
Minnesota Mississippi	027-053-137 MN00064	Wyoming	8TMS-Q

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

SUBCONTRACT ORDER **TestAmerica Portland**

10138003

PTI0296

SENDING LABOR	RATORY:	RECEIVING LABORATORY:						
TestAmerica Po	rtland	Pace Analytical Services, Inc - Minneapolis						
9405 SW Nimbu	s Ave.	1700 Elm Street Suit	e 200					
Beaverton, OR 9	97008	Minneapolis, MN 554	14					
Phone: (503) 906	6-9200	Phone :(612) 607-170	0					
Fax: (503) 906-9	210	Fax: (612) 607-6444						
Project Manager:	Darrell Auvil	Project Location: OR	- OREGON					
		Receipt Temperature:	°C	Ice: Y / N				
Standard TAT is	requested unless specific due	date is requested. => Due Date: $3v$	VUKS Initia					
Analysis	Units	Expires	Comments					
Sample ID: PTI029	96-01 (FO105880 - Soil)	Sampled: 09/08/10 14:45	10138003001					
1668 Coplanar PO	CBs - SUB ug/l	03/07/11 14:45	***209 Cong	eners*** to Pace				
Containers Suppli	ied:							
4 oz. jar Amber	(A)							

Jennia MA

Mores Place MN 9/14/10 1005 Received By Date/Time

-4.4

Released Report No.....10138003_0668 Ane

Received By

Date/TimePage 5 01 25 of 1

Sa	mple Conditio	n Upon Receipt	
Face Analytical Client Name	\uparrow	Λ	- · · · MDM2 CAME
Pace Analytical Client Name	· lest	Hmesica_	Project # <u>/0/3 800 3</u>
		· · · · · · · ·	
Courier: V Fed Ex UPS USPS C Cli Tracking #: 41 70 75261642	ent 📙 Commercia	ILI Pace Other	Obtional Proj-Due Date
Custody Seal on Cooler/Box Present: 12 yes	s 🗌 no Sea	s intact: 🖸 yes 🗖	no Proj. Name:
Packing Material:	le Bags 🔲 None	Other	Temp Blank: Yes No
Thermometer Used 80344042 or (79425)	Type of Ice: We	at the second second second second second second second second second second second second second second second	Samples on ice, cooling process has begun
Cooler Temperature	Biological Tissu		Date and initials of person examining
Temp should be above freezing to 6°C		Comments:	contents: <u>114/10 MSP</u>
Chain of Custody Present:		1.	
Chain of Custody Filled Out:	Drige DNO DN/	2.	
Chain of Custody Relinquished:		3.	
Sampler Name & Signature on COC:	DYes Dino DN/	4.	
Samples Arrived within Hold Time:	Wres DNg DN/	5.	~
Short Hold Time Analysis (<72hr):		6.	
Rush Turn Around Time Requested:	Oves Sho Ona	7.	
Sufficient Volume:		8.	
Correct Containers Used:	Difes DNO DNA	9.	
-Pace Containers Used:			
Containers Intact:		10.	
Filtered volume received for Dissolved tests	DYes DNO DAVA	11.	
Sample Labels match COC:	ĎYes ⊡No ⊡N/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u></u>		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.		1	3 H2SO4 NaOH HCI
All containers needing preservation are found to be in		Samp #	
compliance with EPA recommendation.		Initial when	Lot # of added
Exceptions: VOA, Coliform, TOC, Oll and Grease, WI-DRO (wate	n DYes Divio	completed	preservative
Samples checked for dechlorination:	UYes QNO DAVA	14.	
Headspace in VOA Vials (>6mm):	UYes UNO DAVA	15.	
Trip Blank Present:	□Yes □No 5811/A	16.	
Trip Blank Custody Seals Present	⊡Yes ⊡No 12/N/A		
Pace Trip Blank Lot # (if purchased):		L	
Client Notification/ Resolution:	╲.	1 1	Field Data Required? Y / N
Person Contacted: Ten ([ell AL	Date/	Time: 9/15/100	0011:00
Comments/ Resolution:			
- 1668-900	1 classifi	note an	<u>()</u>
- Ywik sta	A TAT	3-Fine	•••••••••••••••••••••••••••••••••••••••
•			
	·····		••••••••••••••••••••••••••••••••••••••
			7 1
Project Manager Review:	NAY	+	Date: 9/15/10
		· · ·	·····
Note: Whenever there is a discrepancy affecting North C F-L213Rev.00, 05Aug2009	arolina compliance sa		ill be sent to the Rooth Caldinal Stimbles , Inc. Street SE, Suite 200, Minneapolis, MN 55414

Report No	.10138003	1668A
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> Tel: 612-607-1700 Fax: 612-607-6444

Reporting Flags

- A = Reporting Limit based on signal to noise
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- Interference present | =
- J = Estimated value
- Nn = Value obtained from additional analysis
- P = PCDE Interference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %D Exceeds limits
- Y = Calculated using average of daily RFs
- See Discussion =

REPORT OF LABORATORY ANALYSIS

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Report No.....10138003_1668A

Appendix B

Sample Analysis Summary



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

		Client -	Test Amer	rica		
Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PTI0296-01 101380030 P101001A_ BAL 12.2 g 14.5 10.4 g P101001A_ P101001A_ BLANK-264	_09)2 _01))	Matrix Dilution Collected Received Extracted Analyzed	Solid 5 09/08/2010 14:4 09/14/2010 10:0 09/29/2010 14:4 10/01/2010 12:0	95 10
PCB Isomer	IUPAC	RT	Ratio	ng's Added	I ng's Found	% Recovery
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-2,2'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6,6'-TeCB 13C-2,2',4,6,6'-PeCB 13C-3,3',4,4'-TeCB 13C-2,3',4,4'-5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5'-HpCB 13C-2,3',3',4,4',5,5'-6,6'-OcCB 13C-2,3',3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	9.096 12.547 12.894 21.078 17.339 29.392 21.377 36.686 37.273 27.916 40.862 40.191 39.638 39.302 44.048 34.188 47.066 45.876 50.420 40.090 52.962 45.541 55.936 58.307 52.358 60.764	$\begin{array}{c} 2.89\\ 3.30\\ 1.53\\ 1.55\\ 1.01\\ 1.08\\ 0.79\\ 1.59\\ 1.63\\ 1.58\\ 1.58\\ 1.58\\ 1.58\\ 1.54\\ 1.29\\ 1.25\\ 1.26\\ 1.25\\ 1.26\\ 1.25\\ 1.02\\ 0.89\\ 0.87\\ 0.80\\ 0.81\\ 0.68\end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 1.50\\ 1.52\\ 1.67\\ 1.32\\ 1.55\\ 1.41\\ 1.50\\ 1.25\\ 1.25\\ 1.25\\ 1.51\\ 1.13\\ 1.18\\ 1.14\\ 1.17\\ 1.16\\ 1.61\\ 2.34\\ 1.16\\ 1.19\\ 1.57\\ 1.28\\ 1.52\\ 1.32\\ 1.38\\ 1.39\\ 1.30\end{array}$	75 76 84 66 77 71 75 62 63 75 57 59 57 59 57 59 57 59 58 80 58 60 78 64 76 69 69 65
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	24.764 37.273 43.243	1.09 1.55 1.02	2.0 2.0 2.0	1.81 1.65 2.01	90 82 101
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	15.805 26.877 34.439 42.790 55.332	1.64 0.81 1.56 1.28 0.91	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

RT = Retention Time

I = Interference

ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Report No.....10138003_1668A



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename PTI0296-01 (F0105880) 10138003001 P101001A_09

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
1		9.108	3.13	76.2		24.0
2		12.295	2.78	25.6		24.0
3		12.559	3.10	41.9		24.0
4		12.906	1.51	191		24.0
5				ND		24.0
6		16.380	1.38	173		24.0
7		16.057	1.41	32.0		24.0
8		16.992	1.47	814		24.0
9		15.829	1.43	61.5		24.0
10				ND		24.0
11				ND		144
12	12/13	20.670	1.32 I		80.4	48.0
13	12/13	20.670	1.32		(80.4)	48.0
14	12/13	20.070		ND	(00.4)	24.0
15		21.101	1.49	684		24.0
16		20.970	1.04	655		24.0
17		20.395	1.05	787		24.0
18	18/30	19.867	1.06	1610		48.0
19	10/30	17.363	1.08	189		24.0
20	20/28	24.798	1.08	3140		48.0
20	20/28	24.798	1.05	1540		48.0
21	21/33	25.000	1.04	1540		46.0
		25.519	1.03	1090		24.0
23				ND		24.0
24				ND		24.0
25	00/00	24.060	1.05	208		24.0
26	26/29	23.792	1.06	480		48.0
27	00/00	20.682	1.04	155		24.0
28	20/28	24.798	1.05	(3140)		48.0
29	26/29	23.792	1.06	(480)		48.0
30	18/30	19.867	1.06	(1610)		48.0
31		24.445	1.04	2600		24.0
32		21.645	1.04	642		24.0
33	21/33	25.066	1.04	(1540)		48.0
34				ND		24.0
35		28.939	1.02	56.0		24.0
36				ND		24.0
37		29.426	1.03	738		24.0
38				ND		24.0
39				ND		24.0
40	40/41/71	29.174	0.76	1780		144
41	40/41/71	29.174	0.76	(1780)		144
42		28.621	0.79	904		48.0
43	43/73			ND		96.0
44	44/47/65	28.034	0.79	2850		144
45	45/51	24.865	0.78	784		96.0
46		25.217	0.77	275		48.0
47	44/47/65	28.034	0.79	(2850)		144
48		27.766	0.79	670		48.0

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Report No.....10138003_1668A

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ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time

I = Interference ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sar Lab Samp Filename	mple ID ble ID	PTI0296-01 (F01 10138003001 P101001A_09	05880)			
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
		07.404				
49	49/69	27.464	0.77	1750		96.0
50 51	50/53 45/51	24.077 24.865	0.78 0.78	558 (784)		96.0 96.0
52	45/51	26.910	0.78	3270		48.0
53	50/53	24.077	0.78	(558)		96.0
54	30/33	24.077		ND		48.0
55				ND		48.0
56		33.400	0.79	840		48.0
57				ND		48.0
58				ND		48.0
59	59/62/75	28.403	0.80	324		144
60	00,02,10	33.651	0.79	411		48.0
61	61/70/74/76	32.276	0.79	2930		192
62	59/62/75	28.403	0.80	(324)		144
63		31.907	0.74	` 81.3́		48.0
64		29.442	0.78	1320		48.0
65	44/47/65	28.034	0.79	(2850)		144
66		32.645	0.79	`186Ó		48.0
67		31.622	0.76	62.5		48.0
68				ND		48.0
69	49/69	27.464	0.77	(1750)		96.0
70	61/70/74/76	32.276	0.79	(2930)		192
71	40/41/71	29.174	0.76	(1780)		144
72				NĎ		48.0
73	43/73			ND		96.0
74	61/70/74/76	32.276	0.79	(2930)		192
75	59/62/75	28.403	0.80	(324)		144
76	61/70/74/76	32.276	0.79	(2930)		192
77		37.307	0.78	207		48.0
78				ND		48.0
79				ND		48.0
80				ND		48.0
81				ND		48.0
82		36.854	1.53	440		48.0
83		34.926	1.56	142		48.0
84	05/440/447	32.461	1.60	850		48.0
85	85/116/117	36.368	1.56	494		144
86 87	86/87/97/108/119/12		1.64	1700		288
88	86/87/97/108/119/12 88/91	32.226	1.64	(1700) 450		288 96.0
89	00/91	32.981	1.58 1.51	63.7		48.0
90	90/101/113	34.473	1.54	2170		48.0
90 91	88/91	32.226	1.54	(450)		96.0
91	00/01	33.886	1.61	442		48.0
93	93/98/100/102			ND		192
93 94	50/30/100/10Z			ND		48.0
94		31.287	1.58	2140		48.0
96				ND		48.0
00						10.0

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

D = Less than to times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Report No.....10138003_1668A

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename PTI0296-01 (F0105880) 10138003001 P101001A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	35.697	1.64	(1700)		288
98	93/98/100/102			NĎ		192
99		35.060	1.55	1040		48.0
100	93/98/100/102			ND		192
101	90/101/113	34.473	1.54	(2170)		144
102	93/98/100/102			` ΝĎ		192
103				ND		48.0
104				ND		48.0
105		40.879	1.55	972		48.0
106				ND		48.0
107	107/124			ND		96.0
108	86/87/97/108/119/125	35.697	1.64	(1700)		288
109		39.219	1.49	147		48.0
110	110/115	36.536	1.54	2940		96.0
111				ND		48.0
112				ND		48.0
113	90/101/113	34.473	1.54	(2170)		144
114		40.208	1.56	59.4		48.0
115	110/115	36.536	1.54	(2940)		96.0
116	85/116/117	36.368	1.56	(494)		144
117	85/116/117	36.368	1.56	(494)		144
118		39.671	1.57	1980		48.0
119	86/87/97/108/119/125	35.697	1.64	(1700)		288
120				ND		48.0
121				ND		48.0
122				ND		48.0
123	107/124	39.319	1.39	52.9		48.0
124 125	86/87/97/108/119/125	 35.697	 1.64	ND (1700)		96.0 288
	86/87/97/108/119/125		1.04	(1700) ND		
126				ND		48.0 48.0
127 128	128/166	44.115	1.26	354		48.0 96.0
120	129/138/163	42.824	1.26	2310		90.0 144
130	129/130/103	42.024	1.20	157		48.0
130		42.170		ND		48.0
132		39.738	1.24	797		48.0
133				ND		48.0
134	134/143	38.632	1.20	133		96.0
135	135/151	37.458	1.20	672		96.0
136	188/181	34.943	1.23	275		48.0
137		42.388	1.23	115		48.0
138	129/138/163	42.824	1.26	(2310)		144
139	139/140			ND		96.0
140	139/140			ND		96.0
141		41.751	1.18	419		48.0
142				ND		48.0
143	134/143	38.632	1.20	(133)		96.0
144	-	38.062	1.20	111		48.0

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

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Results reported on a dry weight basis

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Report No.....10138003_1668A

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ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		PTI0296-01 (F010 10138003001 P101001A_09)5880)	Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	ng/Kg	ng/Kg
145				ND		48.0
146		40.912	1.28	284		48.0
147	147/149	38.430	1.24	1670		96.0
148				ND		48.0
149	147/149	38.430	1.24	(1670)		96.0
150				ND		48.0
151	135/151	37.458	1.27	(672)		96.0
152				ND		48.0
153	153/168	41.549	1.27	1670		96.0
154				ND		48.0
155				ND		48.0
156	156/157	47.066	1.26	247		96.0
157	156/157	47.066	1.26	(247)		96.0
158		43.226	1.25	218		48.0
159				ND		48.0
160				ND		48.0
161				ND		48.0
162	100/100/100			ND		48.0
163	129/138/163	42.824	1.26	(2310)		144
164		42.505	1.26	152		48.0
165	400/400			ND (05.4)		48.0
166	128/166	44.115	1.26	(354)		96.0
167	450/400	45.893	1.18	93.2		48.0
168	153/168	41.549	1.27	(1670)		96.0
169		 49.749		ND 250		48.0
170	171/173		1.02	359		48.0
171	1/1/1/3	46.127	1.00 0.97	130		96.0
172	171/173	47.788		69.6		48.0
173 174	1/1/1/3	46.127	1.00 1.06	(130) 419		96.0
174		45.037	1.00	A19 ND		48.0 48.0
175		41.382	1.04	62.0		48.0
170		45.490	1.04	231		48.0
178		43.260	1.02	88.8		48.0
179		40.476	1.03	194		48.0
180	180/193	48.458	1.04	781		96.0
181	100/195			ND		48.0
182				ND		48.0
183	183/185	44.803	1.04	301		96.0
184	100/100			ND		48.0
185	183/185	44.803	1.04	(301)		96.0
186				ND		48.0
187		44.165	1.09	500		48.0
188				ND		48.0
189				ND		48.0
190		50.286	1.02	71.8		48.0
191				ND		48.0
192				ND		48.0

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

D = Less that to times higher that method blank level $<math>D = D_{ab}$

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

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Report No.....10138003_1668A

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* = See Discussion

X = Outside QC Limits

RT = Retention Time

I = Interference ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sar Lab Samp Filename		PTI0296-01 (F01) 10138003001 P101001A_09	05880)			
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	48.458	1.04	(781)		96.0
194		55.354	0.98	133		72.0
195				ND		72.0
196		51.091	0.87	90.4		72.0
197	197/200			ND		144
198	198/199	50.420	0.90	188		144
199	198/199	50.420	0.90	(188)		144
200	197/200			ŇĎ		144
201				ND		72.0
202				ND		72.0
203		51.309	0.86	109		72.0
204				ND		72.0
205				ND		72.0
206				ND		72.0
207				ND		72.0
208				ND		72.0
209				ND		72.0

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

Results reported on a dry weight basis

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Report No.....10138003_1668A

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	PTI0296-01 (F0105880)
Lab Sample ID	10138003001
Filename	P101001A_09

Congener Group	Concentration ng/Kg	
Total Monochloro Biphenyls	144	
Total Dichloro Biphenyls	1960	
Total Trichloro Biphenyls	13900	
Total Tetrachloro Biphenyls	20900	
Total Pentachloro Biphenyls	16100	
Total Hexachloro Biphenyls	9680	
Total Heptachloro Biphenyls	3210	
Total Octachloro Biphenyls	520	
Total Nonachloro Biphenyls	ND	
Decachloro Biphenyls	ND	
Total PCBs	66400	

ND = Not Detected Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl **Blank Analysis Results**

Lab Sample ID	BLANK-26					
Filename Injected By	P100930B <u></u> BAL	_09		Matrix	Solid	
Total Amount Extracted	10.4 g			Extracted	09/29/2010 1	4.40
ICAL ID	P100930B	02		Analyzed	09/30/2010 2	
CCal Filename(s)	P100930B			Dilution	NA	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.061	3.18	2.0	1.30	65
13C-4-MoCB	3	12.487	3.06	2.0	1.42	71
13C-2,2'-DiCB	4	12.834	1.59	2.0	1.62	81
13C-4,4'-DiCB	15	21.006	1.54	2.0	1.43	71
13C-2,2',6-TrCB	19 37	17.279	1.08 1.06	2.0	1.67 1.49	83 74
13C-3,4,4'-TrCB	37 54	29.359 21.310	0.79	2.0 2.0	1.49	74 77
13C-2,2',6,6'-TeCB 13C-3,4,4',5-TeCB	54 81	36.837	0.79	2.0	0.553	28
13C-3,3',4,4'-TeCB	77	37.441	0.82	2.0	0.540	20
13C-2,2',4,6,6'-PeCB	104	27.883	1.58	2.0	4.44	222 R
13C-2,3,3',4,4'-PeCB	105	41.046	1.60	2.0	1.43	71
13C-2,3,4,4',5-PeCB	114	40.375	1.56	2.0	1.37	68
13C-2,3',4,4',5-PeCB	118	39.839	1.66	2.0	1.26	63
13C-2,3',4,4',5'-PeCB	123	39.504	1.52	2.0	1.29	65
13C-3,3',4,4',5-PeCB	126	44.165	1.49	2.0	2.07	103
13C-2,2',4,4',6,6'-HxCB	155	34.255	1.23	2.0	1.58	79
13C-HxCB (156/157)	156/157	47.116	1.26	4.0	5.41	135
13C-2,3',4,4 [`] ,5,5'-HxĆB	167	45.959	1.24	2.0	2.45	122
13C-3,3',4,4',5,5'-HxCB 13C-2,2',3,4',5,6,6'-HpCB	169 188	50.386 40.275	1.26 1.09	2.0 2.0	2.90 0.770	145 38
13C-2,3,3',4,4',5,5'-HpCB	189	40.275 52.896	1.09	2.0	1.77	89
13C-2,2',3,3',5,5',6,6'-OcCB	202	45.641	0.91	2.0	1.58	79
13C-2,3,3',4,4',5,5',6-OcCB	205	55.827	0.90	2.0	1.82	91
13C-2,2',3,3',4,4',5,5',6-NoCB		58.177	0.77	2.0	1.88	94
13C-2,2',3,3',4,5,5',6,6'-NoCB		52.314	0.79	2.0	1.85	92
13CDeCB	209	60.634	0.69	2.0	1.77	88
Cleanup Standards						
13C-2,4,4'-TrCB	28	24.714	1.05	2.0	1.65	83
13C-2,3,3',5,5'-PeCB	111	37.458	1.60	2.0	1.34	67
13C-2,2',3,3',5,5',6-HpCB	178	43.377	1.08	2.0	2.06	103
Recovery Standards	_					
13C-2,5-DiCB	9	15.734	1.57	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	26.844	0.79	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	34.523	1.62	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138 194	42.941 55.224	1.25 0.91	2.0 2.0	NA NA	NA NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	00.224	0.91	2.0	IN/A	INA

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time

I = Interference ng's = Nanograms

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Report No.....10138003_1668A

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-26482 P100930B_09

	Os skutisms	57	Dette	Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
1				ND		24.1
2				ND		24.1
2 3 4				ND		24.1
4				ND		24.1
5 6				ND		24.1
6				ND		24.1
7				ND		24.1
8				ND		24.1
9				ND		24.1
10				ND		24.1
11	10/10			ND		144
12	12/13			ND		48.1
13	12/13			ND		48.1
14				ND		24.1
15				ND		24.1
16				ND		24.1
17	40/00			ND		24.1
18	18/30			ND		48.1
19	00/00			ND		24.1
20	20/28			ND		48.1
21	21/33			ND		48.1
22 23				ND ND		24.1 24.1
23 24				ND		24.1
24 25				ND		24.1
25 26	26/29			ND		48.1
20 27	20/29			ND		24.1
28	20/28			ND		48.1
20	26/29			ND		48.1
30	18/30			ND		48.1
31	10/50			ND		24.1
32				ND		24.1
33	21/33			ND		48.1
34	21/00			ND		24.1
35				ND		24.1
36				ND		24.1
36 37				ND		24.1
38				ND		24.1
39				ND		24.1
40	40/41/71			ND		144
41	40/41/71			ND		144
42				ND		48.1
43	43/73			ND		96.2
44	44/47/65			ND		144
45	45/51			ND		96.2

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a dry weight basis

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Report No.....10138003_1668A

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

RT = Retention Time



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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-26482 P100930B_09

IUPAC	Co disting	DT	Datia	Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
46				ND		48.1
47	44/47/65			ND		144
48				ND		48.1
49	49/69			ND		96.2
50	50/53			ND		96.2
51	45/51			ND		96.2
52				ND		48.1
53	50/53			ND		96.2
54				ND		48.1
55				ND		48.1
56				ND		48.1
57				ND		48.1
58				ND		48.1
59	59/62/75			ND		144
60				ND		48.1
61	61/70/74/76			ND		192
62	59/62/75			ND		144
63				ND		48.1
64				ND		48.1
65	44/47/65			ND		144
66				ND		48.1
67				ND		48.1
68				ND		48.1
69	49/69			ND		96.2
70	61/70/74/76			ND		192
71	40/41/71			ND		144
72				ND		48.1
73	43/73			ND		96.2
74	61/70/74/76			ND		192
75	59/62/75			ND		144
76	61/70/74/76			ND		192
77				ND		48.1
78				ND		48.1
79				ND		48.1
80				ND		48.1
81				ND		48.1
82				ND		48.1
83				ND		48.1
84				ND		48.1
85	85/116/117			ND		144
86	86/87/97/108/119/125			ND		289
87	86/87/97/108/119/125			ND		289
88	88/91			ND		96.2
89				ND		48.1
90	90/101/113			ND		144

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a dry weight basis

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X = Outside QC Limits

RT = Retention Time



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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-26482 P100930B_09

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
91	88/91			ND		96.2
92				ND		48.1
93	93/98/100/102			ND		192
94				ND		48.1
95				ND		48.1
96				ND		48.1
97	86/87/97/108/119/125			ND		289
98	93/98/100/102			ND		192
99				ND		48.1
100	93/98/100/102			ND		192
101	90/101/113			ND		144
102	93/98/100/102			ND		192
103				ND		48.1
104				ND		48.1
105				ND		48.1
106				ND		48.1
107	107/124			ND		96.2
108	86/87/97/108/119/125			ND		289
109				ND		48.1
110	110/115			ND		96.2
111				ND		48.1
112				ND		48.1
113	90/101/113			ND		144
114				ND		48.1
115	110/115			ND		96.2
116	85/116/117			ND		144
117	85/116/117			ND		144
118				ND		48.1
119	86/87/97/108/119/125			ND		289
120				ND		48.1
121				ND		48.1
122				ND		48.1
123				ND		48.1
124	107/124			ND		96.2
125	86/87/97/108/119/125			ND		289
126				ND		48.1
127	100/100			ND		48.1
128	128/166			ND		96.2
129	129/138/163			ND		144
130				ND		48.1
131				ND		48.1
132				ND		48.1
133	121/112			ND		48.1
134	134/143			ND		96.2
135	135/151			ND		96.2

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a dry weight basis

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NC = Not Calculated

* = See Discussion

X = Outside QC Limits

RT = Retention Time



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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-26482 P100930B_09

			D (1	Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
136				ND		48.1
137				ND		48.1
138	129/138/163			ND		144
139	139/140			ND		96.2
140	139/140			ND		96.2
141				ND		48.1
142				ND		48.1
143	134/143			ND		96.2
144				ND		48.1
145				ND		48.1
146				ND		48.1
147	147/149			ND		96.2
148				ND		48.1
149	147/149			ND		96.2
150				ND		48.1
151	135/151			ND		96.2
152				ND		48.1
153	153/168			ND		96.2
154				ND		48.1
155				ND		48.1
156	156/157			ND		96.2
157	156/157			ND		96.2
158				ND		48.1
159				ND		48.1
160				ND		48.1
161				ND		48.1
162				ND		48.1
163	129/138/163			ND		144
164				ND		48.1
165	400/400			ND		48.1
166	128/166			ND		96.2
167	450/400			ND		48.1
168	153/168			ND		96.2
169				ND		48.1
170	474/470			ND ND		48.1 96.2
171 172	171/173			ND		96.2 48.1
172	171/170			ND		46.1 96.2
173	171/173			ND		96.2 48.1
174				ND		48.1
175				ND		48.1
170				ND		48.1
178				ND		48.1
178				ND		48.1
180	180/193			ND		96.2
100	100/193			UNI		90.Z

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a dry weight basis

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NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

RT = Retention Time



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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-26482 P100930B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
	00-ciulions		Ratio	ngnyg	iig/itg	ng/ng
181				ND		48.1
182				ND		48.1
183	183/185			ND		96.2
184				ND		48.1
185	183/185			ND		96.2
186				ND		48.1
187				ND		48.1
188				ND		48.1
189				ND		48.1
190				ND		48.1
191				ND		48.1
192				ND		48.1
193	180/193			ND		96.2
194				ND		72.2
195				ND		72.2
196				ND		72.2
197	197/200			ND		144
198	198/199			ND		144
199	198/199			ND		144
200	197/200			ND		144
201				ND		72.2
202				ND		72.2
203				ND		72.2
204				ND		72.2
205				ND		72.2
206				ND		72.2
207				ND		72.2
208				ND		72.2
209				ND		72.2

Conc = Concentration

- EML =Method Specified Reporting Limit (1668A)
- EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

- B = Less than 10 times higher than method blank level
- R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Report No.....10138003_1668A

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time



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Method 1668A Polychlorobiphenyl **Blank Analysis Results**

Client Sample ID	
Lab Sample ID	
Filename	

DFBLKNV BLANK-26482 P100930B_09

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
Decachloro Biphenyls	ND
Total PCBs	ND

ND = Not Detected Results reported on a dry weight basis

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Report No.....10138003_1668Ã



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-26483
Filename	P100930B_10
Total Amount Extracted	10.2 g
ICAL ID	P100930B02
CCal Filename(s)	P100930B_01
Method Blank ID	BLANK-26482

Matrix Solid Dilution NA Extracted 09/29/2010 14:40 Analyzed 10/01/2010 00:01 Injected By BAL

	1	Native Analy	tes	Lal	beled Analyt	es	
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recove	ry
1	1.0	0.990	99	2.0	1.47	73	
3	1.0	1.06	106	2.0	1.54	77	
4	1.0	0.979	98	2.0	1.72	86	
15	1.0	1.14	114	2.0	1.41	70	
19	1.0	0.876	88	2.0	1.66	83	
37	1.0	0.992	99	2.0	1.52	76	
54	1.0	0.962	96	2.0	1.59	79	
81	1.0	1.06	106	2.0	0.680	34	
77	1.0	0.953	95	2.0	0.663	33	
104	1.0	0.955	96	2.0	3.37	169	R
105	1.0	1.02	102	2.0	1.39	69	
114	1.0	1.09	109	2.0	1.31	66	
118	1.0	1.14	114	2.0	1.24	62	
123	1.0	1.06	106	2.0	1.22	61	
126	1.0	1.01	101	2.0	1.95	97	
155	1.0	0.955	96	2.0	1.66	83	
156/157	2.0	2.11	105	4.0	4.28	107	
167	1.0	1.06	106	2.0	2.11	106	
169	1.0	1.05	105	2.0	2.24	112	
188	1.0	1.02	102	2.0	0.939	47	
189	1.0	1.06	106	2.0	1.66	83	
202	1.0	0.970	97	2.0	1.79	90	
205	1.0	1.01	101	2.0	1.75	88	
206	1.0	0.978	98	2.0	1.80	90	
208	1.0	1.03	103	2.0	1.73	86	
209	1.0	1.32	132	2.0	1.62	81	

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

ng = Nanograms

I = Interference

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Report No.....10138003_1668A



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-26484
Filename	P100930B_11
Total Amount Extracted	10.4 g
ICAL ID	P100930B02
CCal Filename(s)	P100930B_01
Method Blank ID	BLANK-26482

Matrix Solid Dilution NA Extracted 09/29/2010 14:40 Analyzed 10/01/2010 01:06 Injected By BAL

	1	Native Analy	tes	Lal	beled Analyt	es	
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recove	ry
1	1.0	1.04	104	2.0	1.42	71	
3	1.0	1.05	105	2.0	1.53	76	
4	1.0	1.06	106	2.0	1.71	85	
15	1.0	1.11	111	2.0	1.44	72	
19	1.0	0.977	98	2.0	1.58	79	
37	1.0	1.02	102	2.0	1.60	80	
54	1.0	0.984	98	2.0	1.62	81	
81	1.0	1.07	107	2.0	0.736	37	
77	1.0	0.989	99	2.0	0.698	35	
104	1.0	0.943	94	2.0	3.48	174	R
105	1.0	1.09	109	2.0	1.46	73	
114	1.0	1.07	107	2.0	1.37	68	
118	1.0	1.14	114	2.0	1.29	64	
123	1.0	1.09	109	2.0	1.30	65	
126	1.0	1.01	101	2.0	2.02	101	
155	1.0	1.01	101	2.0	1.64	82	
156/157	2.0	2.18	109	4.0	4.30	108	
167	1.0	1.10	110	2.0	2.13	107	
169	1.0	1.06	106	2.0	2.31	115	
188	1.0	1.05	105	2.0	0.981	49	
189	1.0	1.07	107	2.0	1.81	90	
202	1.0	0.960	96	2.0	1.96	98	
205	1.0	1.01	101	2.0	1.86	93	
206	1.0	0.990	99	2.0	1.95	97	
208	1.0	0.976	98	2.0	1.88	94	
209	1.0	1.36	136	2.0	1.78	89	

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

ng = Nanograms

I = Interference

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Method 1668A

Spike Recovery Relative Percent Difference (RPD) Results

Client	Test America				
Spike 1 ID Spike 1 Filename	LCS-26483 P100930B_10	Spike 2 Spike 2	2 ID LCSD-2 2 Filename P10093		
Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD	
2-MoCB 4-MoCB 2,2'-DiCB 4,4'-DiCB 2,2',6-TrCB 3,4,4'-TrCB 2,2',6,6'-TeCB 3,3',4,4'-TeCB 3,4,4',5-TeCB 2,2',4,6,6'-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 3,3',4,4',5-PeCB 3,3',4,4',5-PeCB 3,3',4,4',5,5'-HxCB 3,3',4,4',5,5'-HxCB 3,3',4,4',5,5'-HxCB 2,2',3,3',5,5',6,6'-OcCl 2,3,3',4,4',5,5',6,6'-No 2,2',3,3',4,4',5,5',6-No 2,2',3,3',4,4',5,5',6-No 2,2',3,3',4,4',5,5',6,6'-No 2,2',3,3',4,4',5,5',6,6'-No 2,2',3,3',4,4',5,5',6,6'-No 2,2',3,3',4,4',5,5',6,6'-No 2,2',3,3',4,5',5,5',6,6'-No 2,2',3,3',4,5,5',6,6'-No 2,2',3,3',4,5,5',6,6'-No 2,2',3,3',4,5',	3 205 CB 206	$\begin{array}{c} 99\\ 106\\ 98\\ 114\\ 88\\ 99\\ 96\\ 95\\ 106\\ 96\\ 102\\ 109\\ 114\\ 106\\ 101\\ 96\\ 105\\ 106\\ 105\\ 106\\ 105\\ 102\\ 106\\ 97\\ 101\\ 98\\ 103\\ 132 \end{array}$	$\begin{array}{c} 104\\ 105\\ 106\\ 111\\ 98\\ 102\\ 98\\ 99\\ 107\\ 94\\ 109\\ 107\\ 114\\ 109\\ 107\\ 114\\ 109\\ 101\\ 101\\ 109\\ 110\\ 106\\ 105\\ 107\\ 96\\ 101\\ 99\\ 98\\ 136\end{array}$	$\begin{array}{c} 4.9\\ 0.9\\ 7.8\\ 2.7\\ 10.8\\ 3.0\\ 2.1\\ 4.1\\ 0.9\\ 2.1\\ 6.6\\ 1.9\\ 0.0\\ 2.8\\ 0.0\\ 5.1\\ 3.7\\ 3.7\\ 0.9\\ 2.9\\ 0.9\\ 1.0\\ 0.9\\ 1.0\\ 0.0\\ 1.0\\ 5.0\\ 3.0\end{array}$	

%REC = Percent Recovered RPD = The difference between the two values divided by the mean value

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Report No.....10138003_1668A



55 SW Yamhill Street, Suite 400 Portland, OR 97204 P: 503.239.8799 F: 503.239.8940 info@gsiwatersolutions.com www.gsiwatersolutions.com

Laboratory Data QA/QC Review Inline Solids Investigation City Outfall Basin 53A

To:FileFrom:Andrew Davidson, GSI Water Solutions, Inc.Date:October 16, 2011

This memorandum presents a quality assurance/quality control (QA/QC) review of the laboratory data generated from a source control investigation sampling event conducted by the City of Portland (City) in December 2010. One inline solids grab sample (W10L154-01) was collected in Outfall Basin 53A on December 22, 2010 and submitted for analyses.

The laboratory analyses for this source control program sample were completed by the City's Bureau of Environmental Services (BES) Water Pollution Control Laboratory (WPCL) and subcontracted laboratories. The following laboratories conducted the analyses listed:

- BES WPCL
 - o Total Solids (TS) SM 2540G
 - o Metals EPA 6020
 - o Total Mercury EPA 6020
 - o Polychlorinated Biphenyls (PCBs) Aroclors EPA 8082
- Test America (TA)
 - Total Organic Carbon (TOC) EPA 9060 MOD
- Pace Analytical Services (Pace)
 - o PCBs Congeners EPA 1668A

The WPCL laboratory report and the subcontracted laboratory reports for all analyses associated with this sampling event are attached.

The following QA/QC review of the analytical data is based on the available documentation provided by WPCL and the subcontracted laboratories. The QA/QC review of the analytical data

consisted of reviewing the following elements for each laboratory report, if applicable and/or available:

- Chain-of-custody for completeness and continuous custody
- Analysis conducted within holding times
- Chemicals of interest detected in method blanks
- Surrogate recoveries within accuracy control limits
- Internal standard recoveries within accuracy control limits
- Matrix spike and matrix spike duplicate (MS/MSD) sample results within laboratory control limits
- Laboratory control and duplicate laboratory control (LC/DLC) sample recoveries within laboratory control limits
- Relative percent differences (RPDs) for laboratory duplicate samples within laboratory control limits

The results of the QA/QC review of the laboratory reports are presented below.

Chain-of-Custody

The chain-of-custody forms showed continuous custody of the samples. The chain-of-custody procedures appear to have been adequate indicating that sample integrity was maintained throughout the sample collection and delivery process.

Analysis Holding Times

Samples for all analyses were extracted and analyzed within the recommended method-specific holding times.

Method Blanks

Method blanks were processed during the laboratory analyses of metals, mercury, TOC, PCB Aroclors and PCB congeners. The method blank processed during the PCB congener analysis contained a low level of PCB congener 31. However, because the concentration of PCB congener 31 in the sample was greater than ten times the concentration detected in the method blank, the sample results are not qualified. No analytes were detected in the method blanks associated with the analyses for metals, mercury, TOC and PCB Aroclors.

Surrogate Recoveries

Surrogate samples were processed during the laboratory analysis of PCB Aroclors. The surrogate recoveries were within method specific control limits.

Internal Standard Recoveries

Isotopically-labeled internal standards were processed during the subcontracted laboratory analysis of PCB congeners. Labeled internal standard recoveries were within the method-specified control limits, with one exception. The DLC sample recovery is flagged "R" in the

subcontracted laboratory report. Internal standards for all other QC samples and the field sample were recovered within laboratory control limits, and the data are not qualified further.

Interfering background constituents impacted the measurement of some PCB congeners. The affected values are flagged "I" in the subcontracted report to indicate that incorrect isotope ratios were obtained, and an estimated maximum possible concentration (EMPC) is provided. These values are not included in the total homolog and total PCB values.

Matrix Spike/Matrix Spike Duplicates

MS samples were processed during the laboratory analyses of metals, mercury, TOC and PCB Aroclors. An MSD sample was processed during the analysis of PCB Aroclors. MS recoveries of arsenic, chromium, and copper were recovered below laboratory-specified control limits, and MS control limits for manganese and zinc are not applicable because the concentrations of these analytes in the sample were greater than four times the spiked concentration. WPCL reports that the results indicate non-homogenous matrix for the MS sample processed during the metals analysis. However, because other QC results indicate that the analysis was in control and the MS matrix was not taken from the field sample, no sample results are qualified. MS control limits for the TOC analysis are not applicable because the spike amount is less than four times the sample concentration. However, the LC sample recovery for the TOC analysis was within laboratory control limits. MS/MSD recoveries and RPDs for the analysis of PCB Aroclors were also within laboratory control limits.

Laboratory Control Samples

LC samples were processed during the laboratory analyses of metals, mercury, TOC, PCB Aroclors and PCB congeners. A DLC sample recovery was processed during the analysis of PCB congeners. All LC/DLC sample recoveries of target analytes were within laboratory control limits. RPDs were within method-specified control limits for LC/DLC samples processed during the PCB congener analysis.

Laboratory Duplicate Samples

Laboratory duplicate samples were processed during the analyses of metals, total mercury, and TOC. RPDs for some metals were outside of laboratory control limits, and WPCL reports that the duplicate and matrix spike results indicate non-homogenous sample matrix. However, the duplicate sample matrix was not taken from field sample W10L154-01 and other QC results indicate that the metals analysis was in control. Accordingly, sample results are not qualified further. RPDs between duplicate and field samples in the analysis of total mercury and TOC were within laboratory control limits.

Other

During the analysis of PCB Aroclors, a trace amount of Aroclor 1254 was evident below the method detection limit.



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28 January 2011 Linda Scheffler Director's Office RE: Portland Harbor

Enclosed are the results of analyses for samples received by the laboratory on 12/22/10 13:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Renee Chauvin Laboratory Coordinator QA/QC



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LABORATORY ANALYSIS REPORT

Project:Portland HarborWork Order:W10L154Received:12/22/10 13:45Collected By:FO	Client: Director's Office Project Mgr: Linda Scheffler WQDB #: Janus329
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				Sample Collection Date			
Sample	Laboratory ID	<u>Matrix</u>	Туре	<u>Start</u>	End	Qualifier	
53A_8	W10L154-01	Sediment	Composite	12/22/10 12:06	12/22/10 12:06	N	

Case Narrative

Metals matrix QC:

Matrix duplicate and spike results for source sample W11A060-01 indicate non-homogenous matrix for that sample. Analytical system QC results indicate that the analysis was in control, and the RPDs and recoveries outside of acceptance limits are relevant specifically to the source sample.

PCB:

In addition to the Aroclor 1248 reported, a trace amount of Aroclor 1254 was evident (<MDL).

Analyte	Result	MRL	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifie
,							,		
53A_8 : W10L154-01								Sampled: 12/22/1	0 12:06
General Chemistry									
Total solids	81.9	0.01	% W/W		B10L457	12/28/10	12/29/10	SM 2540G	
Fotal Metals									
Total Mercury by ICPMS									
Mercury	0.0505	0.0100	mg/kg dry	20	B11A113	01/08/11	01/12/11	EPA 6020	
Total Metals by ICPMS									
Arsenic	2.50	0.500	mg/kg dry	20	B11A113	01/08/11	01/12/11	EPA 6020	
Cadmium	0.451	0.100	mg/kg dry	20	B11A113	01/08/11	01/12/11	EPA 6020	
Chromium	2470	0.500	mg/kg dry	8000	B11A113	01/08/11	01/13/11	EPA 6020	
Copper	141	0.200	mg/kg dry	100	B11A113	01/08/11	01/12/11	EPA 6020	
Lead	50.5	0.100	mg/kg dry	20	B11A113	01/08/11	01/12/11	EPA 6020	
Manganese	23700	0.200	mg/kg dry	8000	B11A113	01/08/11	01/13/11	EPA 6020	
Nickel	62.9	0.200	mg/kg dry	20	B11A113	01/08/11	01/12/11	EPA 6020	
Silver	0.351	0.100	mg/kg dry	20	B11A113	01/08/11	01/12/11	EPA 6020	
Zinc	153	0.500	mg/kg dry	20	B11A113	01/08/11	01/12/11	EPA 6020	

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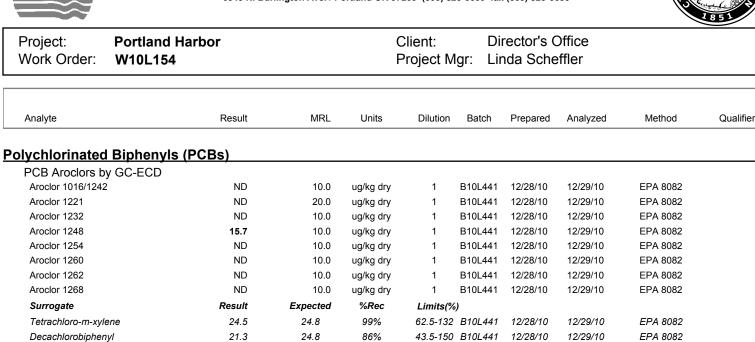
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Renee Chauvin, Laboratory Coordinator QA/QC

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.



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Renee Chauvin, Laboratory Coordinator QA/QC

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Project: Work Order:	Portland Harbor W10L154			Client: Projec		Director's			
		General Chemi	stry - Qu	ality Co	ontrol Re	eport			
A I - 4-	Decili		11-3-	Spike	Source	%Rec	RPD (Limit)	Prepared: Analyzed	Qualifier
Analyte	Result	MRL	Units	Level	Result	(Limits)	(Emm)		
Total Solids - Batch									
Duplicate (B10L457-D	UP1)	Source: W10	0L154-01						
Total solids	80.9	0.01	% W/W		81.9		1 (20)	12/28/10 :12/29/10	
		Total Metals	s - Qualit	y Contr	ol Repo	rt			
Analyte	Result	MRL	Units	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Mercury by IC	PMS - Batch B11A113								
Blank (B11A113-BLK									
	ND	0.0100	mg/kg wet					01/08/11 :01/12/11	
Mercury		0.0100						01/00/11.01/12/11	
Duplicate (B11A113-D	JUP1)	Source: W1 ²	IA060-01						
Mercury	0.05781	0.0100	mg/kg dry		0.06135		6 (20)	01/08/11 :01/12/11	
Matrix Spike (B11A11	3-MS1)	Source: W1	IA060-01						
Mercury	0.8606	0.0100	mg/kg dry	0.761	0.06135	105 (75-125)		01/08/11 :01/12/11	
Reference (B11A113-	SRM1)								
Mercury	5.329	0.0100	mg/kg wet	5.15		103 (75-125)		01/08/11 :01/12/11	
<u>Total Metals by ICP</u>	MS - Batch B11A113								
Blank (B11A113-BLK	1)								
Arsenic	ND	0.500	mg/kg wet					01/08/11 :01/12/11	
Cadmium	ND	0.100	mg/kg wet					01/08/11 :01/12/11	
Chromium	ND	0.500	mg/kg wet					01/08/11 :01/12/11	
Copper	ND	0.200	mg/kg wet					01/08/11 :01/12/11	
Lead	ND	0.100	mg/kg wet					01/08/11 :01/12/11	
Manganese	ND ND	0.200	mg/kg wet					01/08/11 :01/12/11	
Nickel	ND	0.200	mg/kg wet					01/08/11 :01/12/11	
Zinc	ND	0.100	mg/kg wet mg/kg wet					01/08/11 :01/12/11	
Duplicate (B11A113-D		Source: W1							
					44.00		50 (00)	01/08/11 :01/12/11	
Arsenic	6.174	0.500	mg/kg dry		11.02		56 (20)		M1, N
Cadmium	0.7112 59.28	0.100	mg/kg dry		0.8478		18 (20)	01/08/11 :01/12/11	
Chromium	33.20	0.500	mg/kg dry		130.9		75 (20)	01/00/11.01/12/11	M1, N

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laullace Renee Chauvin, Laboratory Coordinator QA/QC

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Project: **Portland Harbor** Work Order: W10L154

Director's Office Client: Project Mgr:

Linda Scheffler

Total Metals - Quality Control Report

Analyte	Result	MRL	Units	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch	n B11A113								
Duplicate (B11A113-DUP1)		Source: W1	IA060-01						
Copper	146.1	0.200	mg/kg dry		169.2		15 (20)	01/08/11 :01/12/11	
Lead	196.5	0.100	mg/kg dry		181.0		8 (20)	01/08/11 :01/12/11	
Manganese	874.4	0.200	mg/kg dry		1027		16 (20)	01/08/11 :01/12/11	
Nickel	34.11	0.200	mg/kg dry		49.25		36 (20)	01/08/11 :01/12/11	M1, N
Silver	0.1343	0.100	mg/kg dry		0.1261		6 (20)	01/08/11 :01/12/11	
Zinc	332.6	0.500	mg/kg dry		357.9		7 (20)	01/08/11 :01/12/11	
Matrix Spike (B11A113-MS1)		Source: W1	1A060-01						
Arsenic	19.19	0.500	mg/kg dry	15.2	11.02	54 (75-125)		01/08/11 :01/12/11	M4, N
Cadmium	15.03	0.100	mg/kg dry	15.2	0.8478	93 (75-125)		01/08/11 :01/12/11	
Chromium	88.67	0.500	mg/kg dry	45.7	130.9	NRNR		01/08/11 :01/12/11	M4, N
Copper	169.9	0.200	mg/kg dry	76.1	169.2	0.9 (75-125)		01/08/11 :01/12/11	M4, N
Lead	239.1	0.100	mg/kg dry	76.1	181.0	76 (75-125)		01/08/11 :01/12/11	
Manganese	897.9	0.200	mg/kg dry	76.1	1027	NRNR		01/08/11 :01/13/11	MS
Nickel	107.9	0.200	mg/kg dry	76.1	49.25	77 (75-125)		01/08/11 :01/12/11	
Silver	13.10	0.100	mg/kg dry	15.2	0.1261	85 (75-125)		01/08/11 :01/12/11	
Zinc	395.1	0.500	mg/kg dry	76.1	357.9	49 (75-125)		01/08/11 :01/12/11	MS
Reference (B11A113-SRM1)									
Arsenic	193.7	0.500	mg/kg wet	225		86 (75-125)		01/08/11 :01/12/11	
Cadmium	69.32	0.100	mg/kg wet	69.1		100 (75-125)		01/08/11 :01/12/11	
Chromium	129.0	0.500	mg/kg wet	124		104 (75-125)		01/08/11 :01/12/11	
Copper	69.68	0.200	mg/kg wet	66.7		104 (75-125)		01/08/11 :01/12/11	
Lead	221.4	0.100	mg/kg wet	223		99 (75-125)		01/08/11 :01/12/11	
Manganese	420.0	0.200	mg/kg wet	434		97 (75-125)		01/08/11 :01/12/11	
Nickel	181.7	0.200	mg/kg wet	172		106 (75-125)		01/08/11 :01/12/11	
Silver	33.43	0.100	mg/kg wet	35.2		95 (75-125)		01/08/11 :01/12/11	
Zinc	397.9	0.500	mg/kg wet	349		114 (75-125)		01/08/11 :01/12/11	

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Renee Chauvin, Laboratory Coordinator QA/QC

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Project: Portland Harbor Work Order: W10L154 Client: Director's Office Project Mgr: Linda Scheffler

Polychlorinated Biphenyls (PCBs) - Quality Control Report

Analyte	Result	MRL	Units	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifie
CB Aroclors by GC-ECD	- Batch B10L441								
lank (B10L441-BLK1)									
Aroclor 1016/1242	ND	10.0	ug/kg wet					12/28/10 :12/29/10	
Aroclor 1221	ND	20.0	ug/kg wet					12/28/10 :12/29/10	
Aroclor 1232	ND	10.0	ug/kg wet					12/28/10 :12/29/10	
Aroclor 1248	ND	10.0	ug/kg wet					12/28/10 :12/29/10	
Aroclor 1254	ND	10.0	ug/kg wet					12/28/10 :12/29/10	
Aroclor 1260	ND	10.0	ug/kg wet					12/28/10 :12/29/10	
Aroclor 1262	ND	10.0	ug/kg wet					12/28/10 :12/29/10	
Aroclor 1268	ND	10.0	ug/kg wet					12/28/10 :12/29/10	
<i>Surrogate</i> Decachlorobiphenyl	20.0		ug/kg wet	20.0		100 (43.5-150)		12/28/10 :12/29/10	
Tetrachloro-m-xylene	19.9		ug/kg wet	20.0		100 (62.5-132)		12/28/10 :12/29/10	
Aroclor 1016/1242	103.7	10.0	ug/kg wet	100		104 (85.4-116.4		12/28/10 :12/29/10	
Aroclor 1016/1242	103.7	10.0	ug/kg wet	100		104 (85.4-116.4		12/28/10 :12/29/10	
Aroclor 1260	92.32	10.0	ug/kg wet	100		92 (64.1-133.6)		12/28/10 :12/29/10	
Surrogate Decachlorobiphenyl								12/28/10 :12/29/10	
	18.7		ug/kg wet	20.0		94 (43.5-150)			
Tetrachloro-m-xylene	19.1		ug/kg wet	20.0		96 (62.5-132)		12/28/10 :12/29/10	
latrix Spike (B10L441-MS1)		Source: W10	L154-01						
Aroclor 1016/1242	119.5	10.0	ug/kg dry	121	ND	99 (55.2-135.4)		12/28/10 :12/29/10	
Aroclor 1260	96.94	10.0	ug/kg dry	121	ND	80 (19.6-166.5)		12/28/10 :12/29/10	
Surrogate									
Decachlorobiphenyl	19.6		ug/kg dry	24.1		81 (43.5-150)		12/28/10 :12/29/10	
Tetrachloro-m-xylene	22.1		ug/kg dry	24.1		92 (62.5-132)		12/28/10 :12/29/10	
latrix Spike Dup (B10L441-N	ISD1)	Source: W10	L154-01						
Aroclor 1016/1242	126.0	10.0	ug/kg dry	123	ND	102 (55.2-135.4	5 (20)	12/28/10 :12/29/10	
Aroclor 1260	93.37	10.0	ug/kg dry	123	ND	76 (19.6-166.5)	4 (20)	12/28/10 :12/29/10	
Surrogate									
Decachlorobiphenyl	19.0		ug/kg dry	24.7		77 (43.5-150)		12/28/10 :12/29/10	
Tetrachloro-m-xylene									

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Renee Chauvin, Laboratory Coordinator QA/QC

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Project Work C		Portland Harbor W10L154	Client: Project Mgr:	Director's Office Linda Scheffler	
		Qualifiers and	Definitions		
M1	Matrix d estimate	uplicate precision measurement indicates non-homoge	nous sample matrix. The	e result should be considered an	
M4	Based o	on low matrix spike recovery, the sample result may be	a low estimate due to ma	atrix interference.	
M9	Matrix s amount.	pike recovery control limits are not applicable because	the sample concentratio	n is greater than 4 times the spike	
Ν	Refer to	case narrative.			
DET	Analyte D	Detected			
ND	Analyte N	Not Detected at or above the reporting limit			
MRL	Method F	Reporting Limit			
MDL	Method D	Detection Limit			
NR	Not Repo	ortable			
dry	Sample r	results reported on a dry weight basis			
% Rec.	Percent I	Recovery			
RPD	Relative I	Percent Difference			

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Renee Chauvin, 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: 12/22/0 Work Order #: 10101154 ę Collected By: MAS, PTB Remarks AAA188 Date: Time: Page_ # of Containers. Received By: Signature: Printed Name: Sediment Time: Date: Matrix: **Requested Analyses** Date: $|\mathcal{L}|_{L^2}|_0$ Signature: WACKEWINE 1345 Printed Name: Bureau of Environmental Services City of Portland Chain-of-Custody PCB Aroclors PCB Congeners (All 209) • Fotal Mercury (nZ , gA , iN , nM , d9 , D0 Date: 222/27/0 Signature: M Fotals Metals (As, Cd, Cr, 201 • \$1 • Sample Type Portland Harbor - Basin 53A Inline COC (12-13-10) xis 1345 J Browtine 12/10 12.06 **Portland Harbor** Sample Time Director's Office Water Pollution Control Laboratory Sample Date Portland, Oregon 97203-4552 Sample Custodian: (503) 823-5696 General Lab: (503) 823-5681 6543 N. Burlington Ave. Special Instructions: Project Name: **Basin 53A Inline** Client Name: Location ID 53A_8 inquished B ature: Page 8 of 43 ләдшп_М дел 3



www.pacelabs.com

Report Prepared for:

Darrell Auvil Test America 9405 SW Nimbus Avenue Beaverton OR 97008

REPORT OF LABORATORY ANALYSIS FOR PCBs

Report Prepared Date: January 16, 2011

Pace Analytical Services, Inc. 1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

Report Information:

Pace Project #: 10146248 Sample Receipt Date: 12/29/2010 Client Project #: PTL0878 Client Sub PO #: N/A State Cert #: MN200001-005

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed by:

January 18, 2011

Scott Unze, Project Manager (612) 607-6383 (612) 607-6444 (fax) scott.unze@pacelabs.com



Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.





DISCUSSION

This report presents the results from the analyses performed on one sample submitted by a representative of Test America - Portland. The sample was analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to approximately 25-75 parts per trillion and were adjusted for the amount of dry sample extracted.

The isotopically-labeled PCB internal standards in the sample extract were recovered at 39-86%. With one exception, flagged "R" on the LCSD results table, the labeled internal standard recoveries obtained for this project were within the target ranges specified in the method. Since the quantification of the native PCB congeners was based on internal standard and isotope dilution methodology, the data were automatically corrected for variation in recovery and accurate values were obtained.

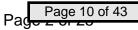
In some cases, interfering substances impacted the determination of PCB congeners. The affected values were flagged "I" where incorrect isotope ratios were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain a low level of one PCB congener. The congener present in the blank was found in the sample extract at a level over ten times higher than in the blank. In general, levels less than ten times the background are not considered statistically different from the background. This indicates that the sample preparation procedures did not significantly contribute to the levels determined for the field sample.

Laboratory spike samples were also prepared with the sample batch using a reference matrix that had been fortified with native standards. The results show that the spiked native compounds were recovered at 99-122% with relative percent differences of 0.0-6.8%. These results indicate high levels of accuracy and precision for the analyses. Matrix spikes were not prepared with the sample batch.

REPORT OF LABORATORY ANALYSIS

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> Tel: 612-607-1700 Fax: 612- 607-6444

Minnesota Laboratory Certifications

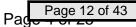
Authority	Certificate #	Authority	Certificate #
Alabama	40770	Montana	92
Alaska	MN00064	Nebraska	
Arizona	AZ0014	Nevada	MN000642010A
Arkansas	88-0680	New Jersey (NE	MN002
California	01155CA	New Mexico	MN00064
Colorado	MN00064	New York (NEL	11647
Connecticut	PH-0256	North Carolina	27700
EPA Region 5	WD-15J	North Dakota	R-036
EPA Region 8	8TMS-Q	Ohio	4150
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (DNR)	959	Oklahoma	D9922
Guam	09-019r	Oregon (ELAP)	MN200001-005
Hawaii	SLD	Oregon (OREL	MN200001-005
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennesee	2818
lowa	368	Tennessee	02818
Kansas	E-10167	Texas	T104704192-08
Kentucky	90062	Utah (NELAP)	PAM
Louisiana	LA0900016	Virginia	00251
Maine	2007029	Washington	C755
Maryland	322	West Virginia	9952C
Michigan	9909	Wisconsin	999407970
Minnesota Mississippi	027-053-137 MN00064	Wyoming	8TMS-Q

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management



- U- \	
101	

SUBCONTRACT ORDER TestAmerica Portland

PTL0878

10146248

SENDING LABORATORY:	RECEIVING LABORATORY:
TestAmerica Portland	Pace Analytical Services, Inc - Minneapolis
9405 SW Nimbus Ave.	1700 Elm Street Suite 200
Beaverton, OR 97008	Minneapolis, MN 55414
Phone: (503) 906-9200	Phone :(612) 607-1700
Fax: (503) 906-9210	Fax: (612) 607-6444
Project Manager: Darrell Auvil	Project Location: Oregon
	Receipt Temperature: $\underline{\rho}.\underline{\mathcal{A}}^{\circ}C$ Ice: $(\underline{Y})/N$
W10L154 Autolog from WPCL 12/23/10 15:44	

Standard TAT is re	PCL 12/23/10 15:44	fic due date is requested. => Due Date:	D1/07/11 Initials:
Analysis	Units	Expires	Comments

Sample ID: PTL0878-01 (W10L154-01 (53A_8) - Sediment) Sampled: 12/22/10 12:06

1668 PCB 209 Congeners - ug/l SUB	06/20/11 12:06	209 congeners to PACE
Containers Supplied:		
4 oz. jar (B)		

Released Report No.....10146248_PEESAne

Released By

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<u>Al</u>

1= 0.20°

Received By

Date/Time

Received By

Page 13 of 43 Date/Time

San	nple	Con	ditio	n Upon Receipt		;
Face Analytical Client Name:	<u> </u>	- St	Am	ala.	Project #	101415248
Courier:	nt 🗖	Com	mercial	Pace Other	(©biloni (Proj. (D)	le Date:
Custody Seal on Cooler/Box Present: Vyes		no	Seal	s intact: 🛛 yes 🔲	no Proj Ni	ime
Packing Material: D Bubble Wrap	Bags		None	Other	Temp Blank: Yes	No /
	-			Blye None		bling process has begun
Cooler Temperature 7.2 Temp should be above freezing to 6°C	Biolo	gicai	Tissu	is Frozen: Yes No Comments:	Date and initial contents:	e of person examining
Chain of Custody Present:	Thes	DNo		1.		
Chain of Custody Filled Out:	L AYes	ΠNo		2.		
Chain of Custody Relinquished:	Wes	⊡N¢		3.		
Sampler Name & Signature on COC:	/					
Samples Arrived within Hold Time:						
Short Hold Time Analysis (<72hr):	□Yes	□ / /₀		6.		
Rush Turn Around Time Requested:	⊡Yes			7.		
Sufficient Volume:		E No		8.		
Correct Containers Used:	Aves			9.		
-Pace Containers Used:				· · · · ·	·	
Containers Intact:	Dies	□No	[]N/A	10.		
Filtered volume received for Dissolved tests	□Yes	DNo		11.	· · · · · · · · · · · · · · · · · · ·	
Sample Labels match COC:		<u> </u>		<u> </u>	**** *** *****	
-Includes date/time/ID/Analysis Matrix:	Í					
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	⊡Yes	ΩNo	ĮŹN/A	13. 🗆 HNO3		
All containers needing preservation are found to be in compliance with EPA recommendation.	[]Yes	□No		Samp #	••••••••••••••••••••••••••••••••••••••	
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water	□Yes	Pho		Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	□Yes	DNo	DAN/A	14.	·····	
Headepace in VOA Vials (>6mm):	[]Yes		CHIVA	15.		
Trip Blank Present:	□Yes	⊡No	ZN/A	16.		
Trip Blank Custody Seals Present	□Yes	⊡no _	ZIN/A			
Pace Trip Blank Lot # (if purchased):						
Client Notification/ Resolution: Person Contacted: Comments/ Resolution:			Date/1	-ime:	Field Data Required?	Y / N
Project Manager Review:	(Ð			Date: 12	[29 [10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the Rever Adalytical SEIMNES, Inc. F-L213Rev.00, 05Aug2009 1700 Elm Street SE, Suite 200, Minneapolic MN 55414

Report No.....10146248_1668A

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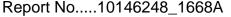
> Tel: 612-607-1700 Fax: 612-607-6444

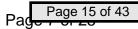
Reporting Flags

- A = Reporting Limit based on signal to noise
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- Interference present | =
- J = Estimated value
- Nn = Value obtained from additional analysis
- P = PCDE Interference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %D Exceeds limits
- Y = Calculated using average of daily RFs
- See Discussion =

REPORT OF LABORATORY ANALYSIS

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Appendix B

Sample Analysis Summary





> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A	Polychlorobi	phenyl Sam	ple Analy	ysis Results
--------------	--------------	------------	-----------	--------------

Client - Test America								
Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PTL0878-0 101462480 P110112B SMT 13.9 g 24.9 10.4 g P110112B P110112B BLANK-27	1 (W10L15 01 _07 02 _01			Solid 5 12/22/2010 12:0 12/29/2010 12:2 01/10/2011 15:4 01/13/2011 00:0	22 15		
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery		
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-2,2'-DiCB 13C-4,4'-DiCB 13C-2,2',6-TrCB 13C-3,4,4'-TrCB 13C-3,4,4'-TrCB 13C-3,4,4',5-TeCB 13C-3,3',4,4'-TeCB 13C-2,3',4,4'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',5,5'-HxCB 13C-3,3',4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,3',4,4',5,5'-HpCB 13C-2,3',4,4',5,5'-HpCB 13C-2,2',3,3',4,4',5,5',6-OcCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB	$\begin{array}{c} 1\\ 3\\ 4\\ 15\\ 19\\ 37\\ 54\\ 81\\ 77\\ 104\\ 105\\ 114\\ 105\\ 114\\ 123\\ 126\\ 155\\ 156/157\\ 167\\ 169\\ 188\\ 189\\ 202\\ 205\\ 206\\ 208\\ 209\end{array}$	$\begin{array}{c} 6.916\\ 9.899\\ 10.222\\ 17.974\\ 14.403\\ 26.126\\ 18.295\\ 33.353\\ 33.923\\ 24.751\\ 37.512\\ 36.858\\ 36.338\\ 36.003\\ 40.665\\ 30.938\\ 43.700\\ 42.560\\ 46.953\\ 36.841\\ 49.490\\ 42.275\\ 52.098\\ 53.952\\ 48.973\\ 55.870\end{array}$	$\begin{array}{c} 2.89\\ 1.39\\ 1.63\\ 1.61\\ 1.00\\ 1.04\\ 0.79\\ 0.81\\ 0.80\\ 1.63\\ 1.57\\ 1.53\\ 1.63\\ 1.59\\ 1.56\\ 1.27\\ 1.28\\ 1.25\\ 1.26\\ 1.06\\ 1.04\\ 0.93\\ 0.87\\ 0.78\\ 0.79\\ 0.71\end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 0.874\\ 1.04\\ 0.788\\ 1.30\\ 0.914\\ 1.72\\ 1.18\\ 1.53\\ 1.51\\ 1.01\\ 1.31\\ 1.32\\ 1.34\\ 1.31\\ 1.32\\ 1.17\\ 2.69\\ 1.38\\ 1.39\\ 1.18\\ 1.41\\ 1.31\\ 1.34\\ 1.25\\ 1.28\\ 1.21\\ \end{array}$	44 68 39 65 46 86 59 77 51 65 66 67 65 66 59 69 59 71 66 67 62 64 61	1	
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	21.615 34.024 39.960	1.12 1.57 1.06	2.0 2.0 2.0	1.75 1.25 1.41	88 63 71		
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	12.954 23.711 31.190 39.491 51.602	1.63 0.80 1.62 1.27 0.91	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA		

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

 $\mathsf{R}=\mathsf{Recovery}$ outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

RT = Retention Time

I = Interference

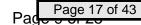
ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Report No.....10146248_1668A





> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename PTL0878-01 (W10L154-01(53A_8) 10146248001 P110112B_07

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
1				ND		23.9
2				ND		23.9
3				ND		23.9
4		10.234	1.58	270		23.9
5		13.900	0.93 I		27.1	23.9
6		13.517	1.54	229		23.9
7		13.194	1.34	54.6		23.9
8		14.080	1.52	1240		23.9
9		12.966	1.40	90.2		23.9
10				ND		23.9
11		17.255	1.49	157		144
12	12/13	17.590	1.35	132		47.9
13	12/13	17.590	1.35	(132)		47.9
14				ŇĎ		23.9
15		17.998	1.54	1140		23.9
16		17.914	1.07	922		23.9
17		17.363	1.07	1180		23.9
18	18/30	16.860	1.06	2270		47.9
19		14.440	1.04	256		23.9
20	20/28	21.632	1.06	5130		47.9
21	21/33	21.900	1.06	2780		47.9
22		22.336	1.05	1800		23.9
23				ND		23.9
24		17.782	1.10	43.6		23.9
25		20.927	1.05	349		23.9
26	26/29	20.676	1.05	804		47.9
27		17.638	1.05	196		23.9
28	20/28	21.632	1.06	(5130)		47.9
29	26/29	20.676	1.05	(804)		47.9
30	18/30	16.860	1.06	(2270)		47.9
31		21.296	1.05	4160		23.9
32		18.580	1.05	885		23.9
33	21/33	21.900	1.06	(2780)		47.9
34				ND		23.9
35		25.706	1.05	73.3		23.9
36				ND		23.9
37		26.142	1.06	1060		23.9
38				ND		23.9
39		24.617	0.92	25.1		23.9
40	40/41/71	25.958	0.80	1940		144
41	40/41/71	25.958	0.80	(1940)		144
42		25.421	0.80	922		47.9
43	43/73	23.996	0.76	151		95.8
44	44/47/65	24.818	0.79	3150		144
45	45/51	21.699	0.80	766		95.8
46		22.068	0.80	247		47.9
47	44/47/65	24.818	0.79	(3150)		144
48		24.600	0.81	892		47.9

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

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Report No.....10146248_1668A

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I = Interference ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client San Lab Samp Filename		PTL0878-01 (W ⁷ 10146248001 P110112B_07	10L154-01(5	53A_8)		
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	24.298	0.79	2050		95.8
50	50/53	20.944	0.79	494		95.8
51	45/51	21.699	0.80	(766)		95.8
52	/	23.744	0.79	3230		47.9
53	50/53	20.944	0.79	(494)		95.8
54				ND		47.9
55 56		30.050	0.78	ND 420		47.9 47.9
57			0.78	420 ND		47.9
58				ND		47.9
59	59/62/75	25.203	0.80	366		144
60	00,02,10	30.284	0.77	238		47.9
61	61/70/74/76	29.010	0.78	1770		192
62	59/62/75	25.203	0.80	(366)		144
63		28.658	0.77	61.8		47.9
64		26.210	0.80	1440		47.9
65	44/47/65	24.818	0.79	(3150)		144
66		29.362	0.78	1010		47.9
67		28.373	0.83	61.7		47.9
68				ND		47.9
69	49/69	24.298	0.79	(2050)		95.8
70	61/70/74/76	29.010	0.78	(1770)		192
71	40/41/71	25.958	0.80	(1940)		144
72 73	43/73	23.996	 0.76	ND (151)		47.9 95.8
73 74	43/73 61/70/74/76	23.996 29.010	0.78	(151) (1770)		95.8 192
75	59/62/75	25.203	0.80	(366)		144
76	61/70/74/76	29.010	0.78	(1770)		192
77	01110111110	33.957	0.78	96.5		47.9
78				ND		47.9
79				ND		47.9
80				ND		47.9
81				ND		47.9
82		33.554	1.58	152		47.9
83		31.676	1.50	51.8		47.9
84		29.194	1.50	271		47.9
85	85/116/117	33.068	1.56	179		144
86	86/87/97/108/119/12		1.56	663		287
87	86/87/97/108/119/12		1.56	(663)		287
88 89	88/91	28.960	1.65	175 ND		95.8 47.9
89 90	90/101/113	31.224	1.59	855		47.9
90 91	88/91	28.960	1.65	(175)		95.8
92	00/01	30.620	1.58	149		47.9
93	93/98/100/102			ND		192
94	23,00,100,102			ND		47.9
95		28.037	1.57	817		47.9
96				ND		47.9

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

D = Less that to times higher that method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

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Report No.....10146248_1668A

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ng's = Nanograms



> Tel: 612-607-1700 Fax: 612-607-6444

Method 1668A Polychlorobiphenyl **Sample Analysis Results**

Client Sample ID Lab Sample ID Filename

PTL0878-01 (W10L154-01(53A_8) 10146248001 P110112B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	32.414	1.56	(663)		287
98	93/98/100/102			` ΝĎ		192
99		31.827	1.53	377		47.9
100	93/98/100/102			ND		192
101	90/101/113	31.224	1.59	(855)		144
102	93/98/100/102			NĎ		192
103				ND		47.9
104				ND		47.9
105		37.546	1.52	368		47.9
106				ND		47.9
107	107/124			ND		95.8
108	86/87/97/108/119/125	32.414	1.56	(663)		287
109				` ΝĎ		47.9
110	110/115	33.253	1.58	985		95.8
111				ND		47.9
112				ND		47.9
113	90/101/113	31.224	1.59	(855)		144
114				` ΝĎ		47.9
115	110/115	33.253	1.58	(985)		95.8
116	85/116/117	33.068	1.56	(179)		144
117	85/116/117	33.068	1.56	(179)		144
118		36.355	1.54	722		47.9
119	86/87/97/108/119/125	32.414	1.56	(663)		287
120				ND		47.9
121				ND		47.9
122				ND		47.9
123				ND		47.9
124	107/124			ND		95.8
125	86/87/97/108/119/125	32.414	1.56	(663)		287
126				` ΝĎ		47.9
127				ND		47.9
128	128/166	40.765	1.25	127		95.8
129	129/138/163	39.524	1.24	782		144
130		38.870	1.37	53.1		47.9
131				ND		47.9
132		36.422	1.26	246		47.9
133				ND		47.9
134	134/143			ND		95.8
135	135/151	34.208	1.24	213		95.8
136		31.660	1.30	92.9		47.9
137		39.088	1.28	48.4		47.9
138	129/138/163	39.524	1.24	(782)		144
139	139/140			NĎ		95.8
140	139/140			ND		95.8
141		38.468	1.15	125		47.9
142				ND		47.9
143	134/143			ND		95.8
144				ND		47.9

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

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Report No.....10146248_1668A

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ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference

ng's = Nanograms



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client San Lab Samp Filename	nple ID le ID	PTL0878-01 (W ² 10146248001 P110112B_07	10L154-01(5	53A_8)		
IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145				ND		47.9
146		37.663	1.30	82.9		47.9
147	147/149	35.164	1.21	468		95.8
148				ND		47.9
149	147/149	35.164	1.21	(468)		95.8
150				NĎ		47.9
151	135/151	34.208	1.24	(213)		95.8
152	450/400			ND		47.9
153	153/168	38.283	1.28	521		95.8
154 155				ND		47.9
155	156/157		1.24	ND 97.7		47.9
150	156/157	43.683 43.683	1.24	(97.7)		95.8 95.8
158	150/157	39.910	1.24	80.0		47.9
159				ND		47.9
160				ND		47.9
161				ND		47.9
162				ND		47.9
163	129/138/163	39.524	1.24	(782)		144
164				` ΝĎ		47.9
165				ND		47.9
166	128/166	40.765	1.25	(127)		95.8
167				NĎ		47.9
168	153/168	38.283	1.28	(521)		95.8
169				ND		47.9
170		46.350	1.07	104		47.9
171	171/173			ND		95.8
172				ND		47.9
173	171/173			ND		95.8
174		41.738	1.02	101		47.9
175 176				ND ND		47.9
177		42.174	1.06	59.9		47.9 47.9
178		42.174		ND		47.9
179				ND		47.9
180	180/193	45.109	1.04	209		95.8
181				ND		47.9
182				ND		47.9
183	183/185			ND		95.8
184				ND		47.9
185	183/185			ND		95.8
186				ND		47.9
187		40.899	1.09	144		47.9
188				ND		47.9
189				ND		47.9
190				ND		47.9
191				ND		47.9
192				ND		47.9

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses Results reported on a dry weight basis ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention TimeI = Interference

ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Report No.....10146248_1668A

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename PTL0878-01 (W10L154-01(53A_8) 10146248001 P110112B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	45.109	1.04	(209)		95.8
194				ŇĎ		71.8
195				ND		71.8
196				ND		71.8
197	197/200			ND		144
198	198/199			ND		144
199	198/199			ND		144
200	197/200			ND		144
201				ND		71.8
202				ND		71.8
203				ND		71.8
204				ND		71.8
205				ND		71.8
206				ND		71.8
207				ND		71.8
208				ND		71.8
209				ND		71.8

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

Results reported on a dry weight basis

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Report No.....10146248_1668A

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms



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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	PTL0878-01 (
Lab Sample ID	10146248001
Filename	P110112B 07

PTL0878-01 (W10L154-01(53A_8) 0146248001 2110112B 07

Congener Group	Concentration ng/Kg	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	3310	
Total Trichloro Biphenyls	21900	
Total Tetrachloro Biphenyls	19300	
Total Pentachloro Biphenyls	5760	
Total Hexachloro Biphenyls	2940	
Total Heptachloro Biphenyls	618	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
Decachloro Biphenyls	ND	
Total PCBs	53900	

ND = Not Detected Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS





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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename Injected By Total Amount Extracted ICAL ID CCal Filename(s)	BLANK-275 P1101128 SMT 10.3 g P11011280 P1101128	_06 02		Matrix Extracted Analyzed Dilution	Solid 01/10/2011 15 01/12/2011 23 5	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-2,2'-DiCB 13C-2,2'-DiCB 13C-2,2',6-TrCB 13C-2,2',6,6'-TeCB 13C-3,4,4'-5-TeCB 13C-3,3',4,4'-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',5,5'-HxCB 13C-3,3',4,4',5,5'-HxCB 13C-2,2',3,4',5,5'-HxCB 13C-2,2',3,3',5,5',6,6'-OcCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\105\\114\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	6.952 9.935 10.259 18.010 14.524 26.126 18.312 33.336 33.923 24.751 37.494 36.857 36.320 35.985 40.646 30.938 43.681 42.541 46.934 36.857 49.465 42.256 52.052 53.884 48.927 55.802	3.23 3.23 1.50 1.55 1.13 1.08 0.81 0.80 0.82 1.60 1.61 1.57 1.63 1.59 1.58 1.28 1.28 1.28 1.28 1.27 1.26 1.05 1.04 0.91 0.90 0.78 0.70	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 1.19\\ 1.37\\ 1.02\\ 1.52\\ 1.07\\ 1.85\\ 1.34\\ 1.68\\ 1.66\\ 1.16\\ 1.74\\ 1.68\\ 1.71\\ 1.72\\ 1.65\\ 1.13\\ 3.21\\ 1.62\\ 1.57\\ 1.16\\ 1.62\\ 1.34\\ 1.51\\ 1.34\\ 1.20\\ 1.28\\ \end{array}$	59 68 51 76 54 92 67 84 83 58 87 84 86 86 82 57 80 81 79 58 81 67 60 64
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	21.632 34.007 39.942	1.09 1.60 1.01	2.0 2.0 2.0	1.96 1.44 1.28	98 72 64
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	13.218 23.728 31.190 39.473 51.578	1.61 0.81 1.64 1.28 0.88	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

Results reported on a total weight basis

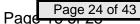
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I = Interference ng's = Nanograms

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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-27524 P110112B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
				ND		24.2
1				ND		24.2
2 3 4				ND		24.2
3				ND		24.2
4 5				ND		24.2
5 6				ND		24.2
7				ND		24.2
8				ND		24.2
9				ND		24.2
10				ND		24.2
11				ND		145
12	12/13			ND		48.5
13	12/13			ND		48.5
14				ND		24.2
15				ND		24.2
16				ND		24.2
17				ND		24.2
18	18/30			ND		48.5
19	10,00			ND		24.2
20	20/28			ND		48.5
21	21/33			ND		48.5
22	,			ND		24.2
23				ND		24.2
24				ND		24.2
25				ND		24.2
26	26/29			ND		48.5
27				ND		24.2
28	20/28			ND		48.5
29	26/29			ND		48.5
30	18/30			ND		48.5
31		21.314	1.08	25.5		24.2
32				ND		24.2
33	21/33			ND		48.5
34				ND		24.2
35				ND		24.2
36				ND		24.2
37				ND		24.2
38				ND		24.2
39				ND		24.2
40	40/41/71			ND		145
41	40/41/71			ND		145
42				ND		48.5
43	43/73			ND		97.0
44	44/47/65			ND		145
45	45/51			ND		97.0

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a total weight basis

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X = Outside QC Limits

RT = Retention Time



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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-27524 P110112B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
46				ND		48.5
47	44/47/65			ND		145
48				ND		48.5
49	49/69			ND		97.0
50	50/53			ND		97.0
51	45/51			ND		97.0
52				ND		48.5
53	50/53			ND		97.0
54				ND		48.5
55				ND		48.5
56				ND		48.5
57				ND		48.5
58				ND		48.5
59	59/62/75			ND		145
60				ND		48.5
61	61/70/74/76			ND		194
62	59/62/75			ND		145
63				ND		48.5
64				ND		48.5
65	44/47/65			ND		145
66				ND		48.5
67				ND		48.5
68				ND		48.5
69	49/69			ND		97.0
70	61/70/74/76			ND		194
71	40/41/71			ND		145
72				ND		48.5
73	43/73			ND		97.0
74	61/70/74/76			ND		194
75	59/62/75			ND		145
76	61/70/74/76			ND		194
77				ND		48.5
78				ND		48.5
79				ND		48.5
80				ND		48.5
81				ND		48.5
82				ND		48.5
83				ND		48.5
84				ND		48.5
85	85/116/117			ND		145
86	86/87/97/108/119/125			ND		291
87	86/87/97/108/119/125			ND		291
88	88/91			ND		97.0
89				ND		48.5
90	90/101/113			ND		145

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a total weight basis

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RT = Retention Time



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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-27524 P110112B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
91	88/91			ND		97.0
92	00/91			ND		48.5
93	93/98/100/102			ND		194
94	33/30/100/102			ND		48.5
95				ND		48.5
96				ND		48.5
97	86/87/97/108/119/125			ND		291
98	93/98/100/102			ND		194
99	00,00,100,102			ND		48.5
100	93/98/100/102			ND		194
101	90/101/113			ND		145
102	93/98/100/102			ND		194
103				ND		48.5
104				ND		48.5
105				ND		48.5
106				ND		48.5
107	107/124			ND		97.0
108	86/87/97/108/119/125			ND		291
109				ND		48.5
110	110/115			ND		97.0
111				ND		48.5
112				ND		48.5
113	90/101/113			ND		145
114				ND		48.5
115	110/115			ND		97.0
116	85/116/117			ND		145
117	85/116/117			ND		145
118				ND		48.5
119	86/87/97/108/119/125			ND		291
120				ND		48.5
121				ND		48.5
122				ND		48.5
123				ND		48.5
124	107/124			ND		97.0
125	86/87/97/108/119/125			ND		291
126				ND		48.5
127	100/100			ND		48.5
128	128/166			ND		97.0
129	129/138/163			ND		145
130				ND		48.5
131				ND		48.5
132 133				ND ND		48.5
133	134/143			ND ND		48.5
134	135/151			ND		97.0 97.0
130	155/151			טא		97.0

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a total weight basis

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* = See Discussion

X = Outside QC Limits

RT = Retention Time



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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-27524 P110112B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
136				ND		48.5
137				ND		48.5
138	129/138/163			ND		145
139	139/140			ND		97.0
140	139/140			ND		97.0
141	100,110			ND		48.5
142				ND		48.5
143	134/143			ND		97.0
144				ND		48.5
145				ND		48.5
146				ND		48.5
147	147/149			ND		97.0
148				ND		48.5
149	147/149			ND		97.0
150				ND		48.5
151	135/151			ND		97.0
152				ND		48.5
153	153/168			ND		97.0
154				ND		48.5
155				ND		48.5
156	156/157			ND		97.0
157	156/157			ND		97.0
158				ND		48.5
159				ND		48.5
160				ND		48.5
161				ND		48.5
162				ND		48.5
163	129/138/163			ND		145
164				ND		48.5
165				ND		48.5
166	128/166			ND		97.0
167				ND		48.5
168	153/168			ND		97.0
169				ND		48.5
170				ND		48.5
171	171/173			ND		97.0
172				ND		48.5
173	171/173			ND		97.0
174				ND		48.5
175				ND		48.5
176				ND		48.5
177				ND		48.5
178				ND		48.5
179				ND		48.5
180	180/193			ND		97.0

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

Results reported on a total weight basis

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NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

RT = Retention Time



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Method 1668A Polychlorobiphenyl **Blank Analysis Results**

Lab Sample ID Filename

BLANK-27524 P110112B 06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
IUFAC	CO-elutions	NI NI	Ralio	ng/Kg	ng/ry	ng/kg
181				ND		48.5
182				ND		48.5
183	183/185			ND		97.0
184				ND		48.5
185	183/185			ND		97.0
186				ND		48.5
187				ND		48.5
188				ND		48.5
189				ND		48.5
190				ND		48.5
191				ND		48.5
192				ND		48.5
193	180/193			ND		97.0
194				ND		72.7
195				ND		72.7
196				ND		72.7
197	197/200			ND		145
198	198/199			ND		145
199	198/199			ND		145
200	197/200			ND		145
201				ND		72.7
202				ND		72.7
203				ND		72.7
204				ND		72.7
205				ND		72.7
206				ND		72.7
207				ND		72.7
208				ND		72.7
209				ND		72.7

Conc = Concentration

- EML =Method Specified Reporting Limit (1668A)
- EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

- B = Less than 10 times higher than method blank level
- R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

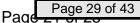
Results reported on a total weight basis

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Method 1668A Polychlorobiphenyl Blank Analysis Results

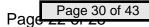
Client Sample ID	
Lab Sample ID	
Filename	

DFBLKXS BLANK-27524 P110112B_06

Congener Group	Concentration ng/Kg	
Total Managhtan Diskawa	ND	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	ND	
Total Trichloro Biphenyls	25.5	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
Decachloro Biphenyls	ND	
Total PCBs	25.5	

ND = Not Detected Results reported on a total weight basis

REPORT OF LABORATORY ANALYSIS





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Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-27525
Filename	P110112B 03
Total Amount Extracted	10.2 g
ICAL ID	P110112B02
CCal Filename(s)	P110112B 01
Method Blank ID	BLANK-27524

MatrixSolidDilutionNAExtracted01/10/2011 15:45Analyzed01/12/2011 20:01Injected BySMT

	N	lative Analy	tes	Lal	beled Analyt	es
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery
1	1.0	1.17	117	2.0	1.07	53
3	1.0	1.22	122	2.0	1.18	59
4	1.0	1.03	103	2.0	0.829	41
15	1.0	1.17	117	2.0	1.33	66
19	1.0	1.03	103	2.0	0.931	47
37	1.0	1.09	109	2.0	1.63	82
54	1.0	1.04	104	2.0	1.14	57
81	1.0	0.972	97	2.0	1.52	76
77	1.0	1.02	102	2.0	1.49	75
104	1.0	1.03	103	2.0	1.00	50
105	1.0	1.07	107	2.0	1.61	80
114	1.0	1.02	102	2.0	1.56	78
118	1.0	1.12	112	2.0	1.57	79
123	1.0	1.04	104	2.0	1.57	78
126	1.0	0.985	98	2.0	1.57	79
155	1.0	1.03	103	2.0	0.999	50
156/157	2.0	2.10	105	4.0	2.96	74
167	1.0	1.01	101	2.0	1.51	76
169	1.0	1.04	104	2.0	1.53	77
188	1.0	1.03	103	2.0	1.04	52
189	1.0	1.04	104	2.0	1.60	80
202	1.0	1.03	103	2.0	1.15	57
205	1.0	1.04	104	2.0	1.35	68
206	1.0	1.06	106	2.0	1.24	62
208	1.0	1.04	104	2.0	1.17	58
209	1.0	1.04	104	2.0	1.19	60

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

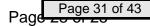
* = See Discussion

ng = Nanograms

I = Interference

REPORT OF LABORATORY ANALYSIS

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID Filename	LCSD-27526 P110112B 04
Total Amount Extracted	10.5 g
ICAL ID	P110112B02
CCal Filename(s)	P110112B_01
Method Blank ID	BLANK-27524

MatrixSolidDilutionNAExtracted01/10/2011 15:45Analyzed01/12/2011 21:01Injected BySMT

	1	Native Analy	tes	Lal	beled Analyt	es
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery
1	1.0	1.16	116	2.0	0.556	28 R
3	1.0	1.17	117	2.0	0.879	44
4	1.0	1.10	110	2.0	0.625	31
15	1.0	1.19	119	2.0	1.13	57
19	1.0	1.04	104	2.0	0.753	38
37	1.0	1.16	116	2.0	1.61	80
54	1.0	1.02	102	2.0	1.10	55
81	1.0	1.02	102	2.0	1.57	78
77	1.0	1.07	107	2.0	1.53	77
104	1.0	1.03	103	2.0	0.977	49
105	1.0	1.07	107	2.0	1.60	80
114	1.0	1.01	101	2.0	1.59	79
118	1.0	1.17	117	2.0	1.59	79
123	1.0	1.03	103	2.0	1.59	80
126	1.0	0.995	100	2.0	1.56	78
155	1.0	1.02	102	2.0	1.06	53
156/157	2.0	2.06	103	4.0	3.14	79
167	1.0	1.03	103	2.0	1.56	78
169	1.0	1.06	106	2.0	1.54	77
188	1.0	1.01	101	2.0	1.04	52
189	1.0	1.03	103	2.0	1.50	75
202	1.0	0.998	100	2.0	1.13	56
205	1.0	1.02	102	2.0	1.35	68
206	1.0	0.993	99	2.0	1.22	61
208	1.0	1.01	101	2.0	1.12	56
209	1.0	1.00	100	2.0	1.13	56

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

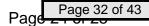
* = See Discussion

ng = Nanograms

I = Interference

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A

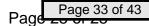
Spike Recovery Relative Percent Difference (RPD) Results

Client	Test America				
Spike 1 ID Spike 1 Filename	LCS-27525 P110112B_03	Spike 2 Spike 2	2 ID LCSD-2 2 Filename P11011		
Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD	
2-MoCB 4-MoCB 2,2'-DiCB 4,4'-DiCB 2,2',6-TrCB 3,4,4'-TrCB 2,2',6,6'-TeCB 3,3',4,4'-TeCB 3,4,4',5-TeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,2',4,4',6,6'-HxCB (156/157) 2,3',4,4',5,5'-HxCB 3,3',4,4',5,5'-HxCB 2,2',3,4',5,5'-HxCB 2,2',3,3',5,5',6,6'-OcCl 2,3,3',4,4',5,5',6,6'-Noc 2,2',3,3',4,4',5,5',6,6'-Noc 2,2',3,3',4,4',5,5',6,6'-Noc 2,2',3,3',4,5,5',6,6'-Noc 2,2',3,3',4,5,5',6,6'-Noc 2,2',3,3',4,5,5',6,6'-Noc	3 205 CB 206	$\begin{array}{c} 117\\ 122\\ 103\\ 117\\ 103\\ 109\\ 104\\ 102\\ 97\\ 103\\ 107\\ 102\\ 112\\ 104\\ 98\\ 103\\ 105\\ 101\\ 104\\ 103\\ 104\\ 103\\ 104\\ 103\\ 104\\ 106\\ 104\\ 104\\ 104\\ 104\\ 104\\ 104\\ 104\\ 104$	$\begin{array}{c} 116\\ 117\\ 110\\ 119\\ 104\\ 116\\ 102\\ 107\\ 102\\ 103\\ 107\\ 101\\ 117\\ 103\\ 100\\ 102\\ 103\\ 100\\ 102\\ 103\\ 106\\ 101\\ 103\\ 100\\ 102\\ 99\\ 101\\ 100\\ \end{array}$	$\begin{array}{c} 0.9\\ 4.2\\ 6.6\\ 1.7\\ 1.0\\ 6.2\\ 1.9\\ 4.8\\ 5.0\\ 0.0\\ 0.0\\ 1.0\\ 4.4\\ 1.0\\ 2.0\\ 1.0\\ 1.9\\ 2.0\\ 1.9\\ 2.0\\ 1.9\\ 2.0\\ 1.9\\ 2.0\\ 1.9\\ 2.0\\ 1.9\\ 3.0\\ 1.9\\ 6.8\\ 2.9\\ 3.9\end{array}$	

%REC = Percent Recovered RPD = The difference between the two values divided by the mean value

REPORT OF LABORATORY ANALYSIS

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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: PTL0878

TestAmerica Sample Delivery Group: PTL0878 Client Project/Site: W10L154 Client Project Description: Portland Harbor

For:

LINKS

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Expert

City of Portland Water Pollution Laboratory 6543 N. Burlington Ave. Portland, OR 97203

Attn: Renee Chauvin

handle W. Amil

Authorized for release by: 1/20/2011 4:30 PM

Darrell Auvil Project Manager darrell.auvil@testamericainc.com

Results relate only to the items tested and the sample(s) as received by the laboratory. The test results in this report meet all 2003 NELAC requirements for accredited parameters, exceptions are noted in this report. Pursuant to NELAC, 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.

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Detection Summary	5
Client Sample Results	6
QC Sample Results	7
Certification Summary	8
Chain of Custody	9

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
PTL0878-01	W10L154-01 (53A_8)	Sediment	12/22/10 12:06	12/23/10 15:44

TestAmerica Portland Page 36 of 43

Qualifiers

TSEA

4

Qualifier Qualifier Description

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

Glossary	Glossary Description
¢	Listed under the "D" column to designate that the result is reported on a dry weight basis.

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Detection Summary

Client Sample ID: W10L154-01	(53A_8)					L	ab	Sample I	D: PTL0878-01
Analyte		Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	12000		2000		mg/Kg	1		9060	total

Method: 9060 - Organic Carbon, T	otal (T	OC)							
Client Sample ID: W10L154-01 (53A_8)							Lab S	ample ID: PTL	0878-01
Date Collected: 12/22/10 12:06								Matrix: Se	diment
Date Received: 12/23/10 15:44									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		2000		mg/Kg		01/10/11 10:38	01/10/11 10:38	1

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: 580-78904-3 Matrix: Soil											C	Client S	ample ID: 580 Prep Ty		
Analysis Batch: 78904													Prep Batch:		
Analysis Batch. 70004	В	lank Bl	ank										Trep Baten.	105	·
Analyte	Re	esult Q	ualifier		RL	м	DLι	Jnit		D	P	repared	Analyzed	0	Dil Fac
Total Organic Carbon		ND			2000		n	ng/Kg		0	1/10/1	1 08:32	01/10/11 08:32		
Lab Sample ID: 580-78904-4											c	Client S	ample ID: 580	-789	904-4
Matrix: Soil													Prep Ty	pe:	tota
Analysis Batch: 78904													Prep Batch:	789	04_F
				Spike		LCS	LCS						% Rec.		
Analyte				Added	ļ	Result	Qual	lifier	Unit		D	% Rec	Limits		
Total Organic Carbon				2720		4500			mg/Kg			165	34 - 166		
•															
Lab Sample ID: 237861S										Clien	nt Sa	mple ID	: W10L154-01	(53	A_8
										Clien	nt Sa	mple ID	W10L154-01 : Prep Ty		
Matrix: Soil										Clien	nt Sa	mple ID		pe:	tota
Matrix: Soil	Sample	Sample		Spike	Matrix	Spike	Matr	ix Spike)	Clien	nt Sa	mple ID	Prep Ty	pe:	tota
Matrix: Soil Analysis Batch: 78904		Sample Qualifie		Spike Added		Spike Result		•) Unit			mple ID % Rec	Prep Ty Prep Batch:	pe:	tota
Matrix: Soil Analysis Batch: 78904 Analyte		•		•		•	Qual	•			D 9	·	Prep Ty Prep Batch: % Rec.	pe:	tota
Matrix: Soil Analysis Batch: 78904 Analyte Total Organic Carbon	Result	•		Added		Result	Qual	•	Unit		D 9	% Rec 10874 4	Prep Ty Prep Batch: % Rec. Limits	789	tota 04_P
Matrix: Soil Analysis Batch: 78904 Analyte Total Organic Carbon Lab Sample ID: 237861X	Result	•		Added		Result	Qual	•	Unit		D 9	% Rec 10874 4	Prep Ty Prep Batch: % Rec. Limits 76 - 128	(53	total 04_P
Matrix: Soil Analysis Batch: 78904 Analyte Total Organic Carbon Lab Sample ID: 237861X Matrix: Soil	Result	•		Added		Result	Qual		Unit		D 9	% Rec 10874 4	Prep Ty Prep Batch: % Rec. Limits 76 - 128 : W10L154-01	(53 pe:	total 04_P A_8) total
Matrix: Soil Analysis Batch: 78904 Analyte Total Organic Carbon Lab Sample ID: 237861X Matrix: Soil	Result	Qualifie	er	Added		Result	Qual	lifier	Unit		D 9	% Rec 10874 4	Prep Ty Prep Batch: % Rec. Limits 76 - 128 : W10L154-01 Prep Ty	(53 pe:	total 04_P (A_8) total 04_P
Lab Sample ID: 237861S Matrix: Soil Analysis Batch: 78904 Analyte Total Organic Carbon Lab Sample ID: 237861X Matrix: Soil Analysis Batch: 78904 Analyte	Result 12000 Sample	Qualifie	er	Added	Du	Result 33300	Qual 4	lifier	Unit		D 9	% Rec 10874 4	Prep Ty Prep Batch: % Rec. Limits 76 - 128 : W10L154-01 Prep Ty	(53 789	total 04_P A_8) total

1

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Certification Summary

Client: City of Portland Water Pollution Laboratory Project/Site: W10L154

Laboratory	Authority	Program	EPA Region	Certification ID	Expiration Date
TestAmerica Portland	Alaska	State Program	10	OR00040	04/21/11
TestAmerica Portland	California	State Program	9	2597	09/30/11
TestAmerica Portland	Oregon	NELAC	10	OR100021	01/09/11
TestAmerica Portland	Washington	State Program	10	C586	06/23/11
TestAmerica Seattle		USDA		P330-08-00099	05/22/11
TestAmerica Seattle	Alaska	Alaska UST	10	UST-022	03/04/11
TestAmerica Seattle	California	NELAC	9	1115CA	01/31/11
TestAmerica Seattle	Florida	NELAC	4	E871074	06/30/11
TestAmerica Seattle	L-A-B	DoD ELAP 0		L2236	01/19/13
TestAmerica Seattle	L-A-B	ISO/IEC 17025	0	L2236	01/19/13
TestAmerica Seattle	Montana	State Program	8		04/30/20
FestAmerica Seattle	Oregon	NELAC	10	WA100007	11/06/11
TestAmerica Seattle	Washington	State Program	10	C553	02/17/11

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

TLOE

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SUBCONTRACT ORDER

City of Portland Water Pollution Control Lab

W10L154

SENDING LABORATORY:		RECEIVING LABORATORY:
City of Portland Water Pollution Co	ontrol Lab	TestAmerica
6543 N. Burlington Ave		9405 SW Nimbus Ave
Portland, OR 97203		Beaverton, OR 97008
Phone: 503-823-5600		Phone :(503) 906-9200
Fax: 503-823-5656		Fax: (503) 906-9210
Invoice To: Charles Lytle using P.	0,# 30001516	
WPCL Project Name Portland Harbor		TURNAROUND REQUEST
		Rush _ day(s)
Analysis	Due	Expires Laboratory ID Comments
Sample ID: W10L154-01	Solid	Sampled:12/22/10 12:06
Out-TOC Solid	01/07/11 17:00	01/05/11 12:06
Out-PCB Congeners 209 (Pace)	01/07/11 17:00	06/20/11 12:06
Containers Supplied:		
G jar amber 4 oz (A) G jar a	imber 4 oz (B)	

'Um (2/23/10 C Date 10540 D:40 Released B Received By 12 :00 6 Réceived By Date Released By 5150 Page 1 of 1

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estA	merica		
ie leader in E	NVIRONMENTAL TEBTING		
	Portland Sample Co	ontrol Checklist	
	DTINDIN		
Work Or Client Na	ame: <u>Citil of Porc</u>	me Received: 12-23-10 1200	
Project N	Name: 10101154		
Time Zone:]PDT/PST 🗌 AK 🗌 OTHER	
Unpackin	ng Checks: er (s): <u>5.75</u>	Temperature out of Range:	
Temperatu	ıre (s):	Not enough or No Ice Ice Melted	
Di	igi #1 Digi #2 IR Gun	W/in 4 Hrs of collection Ice Not Needed	
	Raytek	Other:	
Ice used: (E OTHER: Initials: V	
N/A Yes	No		
	1. If ESI client, were temp blanks rece	eived? If no, document on NOD.	
	\square 2. Cooler Seals intact? (N/A if hand do		
Þ	3. Chain of Custody present? Along w with date & time? If no, document o	with "received by" & "relinquished by" signatures on NOD.	
	4. Bottles received intact? If no, docu		
Ż	5. Sample is not multiphasic? If no, d	document on NOD.	
Z	6. Sampler name/signature documente		
	7. Proper Container and preservatives		
	•	et requirements? If no, document on NOD.	
		des and meet requirements? If no, notify PM.	
	10. HF Dilution required?	Il analysis and requested MS/MSD? If no,	
	document on NOD and consult PM be	efore proceeding.	
		samples received? If no, document on NOD.	
	13. Were VOA samples received with	-	
	\square 14. Did samples require preservation v		
	••••••••••••••••••••••••••••••••••••••	lorine test negative? If no, document on NOD.	
	\square 16. Are analyses with short holding ti	s bottles sediment-free? If no, document on NOD.	

annun Annun

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APPENDIX D Outfall Basin 53A 2010 Stormwater Sampling Data Summary Report

Appendix D Outfall Basin 53A 2010 Stormwater Sampling Data Summary Report

Introduction

In December 2010, the City of Portland (City) conducted a stormwater sampling event in Basin 53A to monitor discharges from individual branches of the conveyance system and to determine whether there were additional sources of PCBs and metals between the junction of the three branches and the outfall. Samples were collected at five locations as shown on Figure D-1. Manhole AAA170 was selected because it is located downstream of the junction of the three branches and represents discharges from the whole basin. Samples were also collected upstream of manhole AAA179 in each of the individual branches of the conveyance system. These samples were collected to characterize the whole discharges from each individual branch. An additional sample was collected at manhole AAA188, upstream of the Consolidated Metco Inc. (ConMet) facility, to evaluate whether contaminant concentrations observed in the downstream portion of the southern branch were originating from the ConMet property or from upstream of ConMet connections.

Basin Setting and Physical System

Outfall 53A discharges to the east side of the Willamette River at approximately river mile 2.7, in the Portland Harbor Study Area (see Figure C-1). The outfall discharges stormwater runoff from an approximately 66-acre drainage basin within the North Rivergate industrial area. The Basin 53A conveyance system was constructed in 1970, and the basin expanded through the early 1980s as industrial sites in the area developed and connected to the system.

The basin stormwater conveyance system consists of three branches and associated catchment systems that drain to a 48-inch-diameter main line at the intersection of N. Rivergate Boulevard and N. Ramsey Boulevard (see Figure C-1). Three stormwater lines discharge to the 48-inch-diameter main at manhole AAA179: a 36-inch-diameter pipe conveys stormwater drainage from the northern portion of the outfall basin ("northern branch"), a 24-inch-diameter pipe conveys stormwater drainage from the eastern portion of the basin ("eastern branch"), and a 42-inch-diameter pipe conveys stormwater drainage from the southern portion of the basin ("southern branch").

Field Sampling Activities

The City conducted the stormwater sampling activities in accordance with the City's Winter 2010-11 Sampling and Analysis Plan (SAP) (BES, 2010). Stormwater samples were collected during a single storm event on December 7, 2010. All stormwater grab samples were collected with a sterilized stainless steel beaker in accordance with the City's Standard Operating

Procedure (SOP) 2.02b. Field notes taken during stormwater sampling activities are provided in Attachment D-1.

Storm Event Sampled

The SAP identifies the following target storm event criteria (consistent with the JSCS) for stormwater sampling:

- Antecedent dry period of at least 24 hours (as defined by <0.1 inches of rainfall over the previous 24 hours);
- Minimum predicted rainfall volume of >0.2 inches for the storm event; and
- Expected duration of the storm event of at least 3 hours.

These criteria were developed as part of the JSCS for implementation by upland sites. For the purposes of the City's basin-scale source investigations, the criteria are used as general guidelines to determine if forecasted storms should be targeted for sampling. Project personnel worked directly with a weather service during storm event selection and sampling mobilization to target a storm event that would meet the JSCS criteria. A precipitation graph presenting data collected at the Simmons rain gage (the nearest City rain gauge located at 16001 N. Simmons Rd.) is shown on Figure D-2. The samples were not considered to be representative of "first-flush" conditions.

Approximately 0.09 inches of rain was recorded at the Simmons rain gage for the 36 hours preceding this event. The minimum forecasted rainfall for this event was 0.21 inches. Rainfall began on December 7 between 12:00 and 1:00 p.m., Pacific Standard Time (PST), and samples were collected between 6:12 and 7:08 pm. By the time of sampling, 0.22 inches of rainfall had been recorded by the Simmons rain gage; a total of 1.0 inches was recorded by the time the storm event ended between 9:00 a.m. and 10:00 a.m. on December 8.

Based on these sampling conditions, the five stormwater samples collected on December 7 are considered to meet the sampling objectives.

Analytical Approach

The stormwater samples were analyzed for PCB congeners, metals, and TSS by the BES Water Pollution and Control Laboratory (WPCL) or subcontracted laboratories in accordance with the SAP.

Summary of Results

PCB congeners were detected in the samples from the eastern branch, the whole-basin and the downstream end of the southern branch. Most metals were detected at low concentrations in all of the stormwater samples. Tables D-1 and D-2 summarize the laboratory analytical results for the stormwater samples and include the JSCS screening level values (SLVs) for reference. The laboratory reports and data review memorandum for the samples are included in Attachment D-2.

References

BES. 2010. City of Portland Outfall Project, Source Investigations for Basins 18, 43, 53A, S-1, S-2 and S-6, Winter 2010-11 Sampling and Analysis Plan. December 6, 2010.

Tables

Table D-1 - Outfall Basin 53A 2010 Stormwater Results

Table D-2 - Outfall Basin 53A 2010 Stormwater PCB Congener Results

Figure

Figure D-1 – Outfall Basin 53A- 2010 Stormwater Sample Locations Figure D-2 – Outfall Basin 53A- December 7, 2010 Precipitation Graph

Attachments

Attachment D-1 – *Field Notes* Attachment D-2 – *Laboratory Results* Tables

Table D-1Basin 53A December 2010 Stormwater Results

		Whole Basin	Northern Branch	Southe	ern Branch	Eastern Branch	JSCS	S Stormwater SLVs ⁽¹⁾		
		Manhole AAA170 Within manhole W10L059-01	Manhole AAA179 Upstream of manhole in 36" Line W10L059-05	Manhole AAA188 Within manhole W10L059-02	Manhole AAA179 Upstream of manhole in 42" Line W10L059-03	Manhole AAA179 Upstream of manhole in 24" Line W10L059-04	Human Health Fish	Human Health		
lass Analyte	Units	12/7/2010	12/7/2010	12/7/2010	12/7/2010	12/7/2010	Consumption ⁽²⁾	Ingestion ⁽³⁾	Ecological ⁽⁴⁾	
otal Suspended Solids (SN	4 2540D)									
TSS	mg/L	29	7	5	22	61				
otal Metals (EPA 200.8)										
Arsenic	μg/L	0.685	0.469	0.483	0.642	0.921	0.14	0.045	150	
Cadmium	μg/L	0.139	0.100 U	0.100 U	0.158	0.171		5	0.094	
Chromium	μg/L	12.0	9.25	2.64	15.7	39.6		100		
Copper	μg/L	7.97	3.80	5.23	7.45	16.4		1300	2.7	
Lead	μg/L	4.24	2.02	3.50	2.75	10.2		15	0.54	
Mercury ⁽⁵⁾	μg/L	0.00690	0.00355	0.00616	0.00623	0.0131	0.146	2	0.77	
Manganese	μg/L	212	131	25.7	234	544	100	50		
Nickel	μg/L	2.13	1.24	0.997	2.20	5.16	4600	730	16	
Silver	μg/L	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U		100	0.12	
Zinc	µg/L	337	272	31.3	573	83.6	26000	5000	36	
olychlorinated Biphenyl C	ongeners (PCBs) (EPA	A 1668A)								
Tota	l PCBs ⁽⁶⁾⁽⁷⁾ µg/L	0.000278 NJ	ND	ND	0.000376 NJ	0.0173 J	0.000064	0.034	0.014	

Notes:

-- No JSCS screening level available.

J = Estimated Value. Total PCB value includes one or more estimated values due to internal standard recoveries outside of method control limits.

ND = Not detected

NJ = Tentatively identified and estimated. Total PCB congener values are based on a single congener detection, which is unlikely to occur.

U = The analyte was not detected above the reported sample quantification limit.

µg/L = Micrograms per liter

mg/L = Milligrams per liter

⁽¹⁾ JSCS SLVs = Portland Harbor Joint Source Control Strategy Screening Level Values (DEQ/EPA Final December 2005, Amended July 2007).

(2) The SLVs for chemicals in water taken up by fish for human consumption represent EPA's NRWQC values. If no NRWQC values are available, then DEQ's AWQC values are listed for the constituent.

(3) The SLVs for chemicals in water for human ingestion represent the most conservative value between EPA's MCLs and Region 9 PRGs.

(4) The SLVs for chemicals in water for ecological exposure represent EPA's NRWQC values. If no NRWQC values are available, then DEQ's AWQC values are listed for the constituent. If no AWQC values are available, then Oak Ridge National Laboratory Tier II SCV Technology Benchmark values are listed for the constituent.

⁽⁵⁾ Mercury analysis by WPCL SOP M-10.02.

(6) See Table D-2 for individual congener results.

(7) Total PCBs are calculated by assigning "0" to undetected and EMPC-qualified constituents.

= Highlighted values have been selected by DEQ for initial upland source control screening evaluations.

bold = Concentration exceeds DEQ's SLV.

APPENDIX D OUTFALL BASIN 53A DECEMBER 2010 STORMWATER SAMPLING

Table D-2 Basin 53A 2010 Stormwater - PCB Congeners Results

			Whole Basin	Northern Branch	Souther	rn Branch	Eastern Branch	JSCS	Stormwater SLV	$\sqrt{s}^{(2)}$
			Manhole AAA170 Within manhole W10L059-01	Manhole AAA179 Upstream of manhole in 36" Line W10L059-05	Manhole AAA188 Within manhole W10L059-02	Manhole AAA179 Upstream of manhole in 42" Line W10L059-03	Manhole AAA179 Upstream of manhole in 24" Line W10L059-04	Human Health Fish	Human Health	
IUPAC Number ⁽¹⁾	Chemical Name	Units	12/7/2010	12/7/2010	12/7/2010	12/7/2010	12/7/2010	Consumption ⁽³⁾	Ingestion ⁽⁴⁾	Ecological ⁽⁵⁾
Polychlorinated Biphe	nyl Congeners (EPA 1668A)									
PCB 1	2-MoCB	μg/L	0.00122 UJ	0.000802 UJ	0.000688 UJ	0.000535 UJ	0.000837 UJ			
PCB 2	3-MoCB	μg/L	0.000478 UJ	0.000412 UJ	0.000435 UJ	0.000261 UJ	0.000257 UJ			
PCB 3	4-MoCB	μg/L	0.000262 UJ	0.000441 UJ	0.000443 UJ	0.000261 UJ	0.000249 UJ			
PCB 4	2,2'-DiCB	μg/L	0.00412 UJ	0.0131 UJ	0.00557 UJ	0.00167 UJ	0.00146 UJ			
PCB 5	2,3-DiCB	μg/L	0.000251 UJ	0.000256 UJ	0.000241 UJ	0.000261 UJ	0.000249 UJ			
PCB 6	2,3'-DiCB	μg/L	0.000251 UJ	0.000256 UJ	0.000241 UJ	0.000261 UJ	0.000249 UJ			
PCB 7	2,4-DiCB	μg/L	0.000251 UJ	0.000256 UJ	0.000241 UJ	0.000261 UJ	0.000249 UJ			
PCB 8	2,4'-DiCB	μg/L	0.000251 UJ	0.000301 UJ	0.000241 UJ	0.000261 UJ	0.000249 UJ			
PCB 9	2,5-DiCB	μg/L	0.000251 U	0.000256 UJ	0.000241 UJ	0.000261 U	0.000249 U			
PCB 10 PCB 11	2,6-DiCB 3.3'-DiCB	μg/L	0.000251 U	0.000847 UJ	0.000296 UJ	0.000261 U	0.000249 U			
PCB 11 PCB 12/13	3,3-DICB 3,4-DICB + 3,4'-DICB	μg/L μg/L	0.00151 U	0.00154 UJ	0.00145 UJ 0.000482 UJ	0.00156 U	0.00149 U 0.000497 U			
PCB 12/13 PCB 14	3,5-DiCB		0.000503 U 0.000251 U	0.000512 UJ 0.000256 UJ	0.000482 UJ	0.000521 U 0.000261 U	0.000497 U 0.000249 U			
PCB 14 PCB 15	4.4'-DiCB	μg/L	0.000251 U	0.000256 UJ	0.000241 UJ	0.000261 U	0.000249 0			
PCB 15 PCB 16	4,4-DICB 2.2'.3-TriCB	μg/L μg/L	0.000251 U	0.000256 UJ	0.000241 UJ	0.000261 U	0.000308 0.000249 U			
PCB 10 PCB 17	2,2,3-110B	μg/L	0.000251 U	0.000256 UJ	0.000241 UJ	0.000261 U	0.000249 U			
PCB 18/30	2,2',5-TriCB + 2,4,6-TriCB	μg/L μg/L	0.000503 U	0.000238 UJ	0.000241 UJ	0.000201 U	0.000249 U			
PCB 18/30 PCB 19	2,2',6-TriCB	μg/L	0.000251 UJ	0.000484 UJ	0.000241 UJ	0.000321 U 0.000261 UJ	0.000249 UJ			
PCB 20/28	2,3,3'-TriCB + 2,4,4'-TriCB	μg/L	0.000503 UJ	0.000512 UJ	0.000482 UJ	0.000521 UJ	0.00104 J			
PCB 21/33	2,3,4-TriCB + 2',3,4-TriCB	μg/L	0.000503 UJ	0.000512 UJ	0.000482 UJ	0.000521 UJ	0.000497 UJ			
PCB 22	2.3.4'-TriCB	μg/L	0.000251 UJ	0.000256 UJ	0.000241 UJ	0.000261 UJ	0.000368 J			
PCB 23	2,3,5-TriCB	μg/L	0.000251 UJ	0.000256 UJ	0.000241 UJ	0.000261 UJ	0.000249 UJ			
PCB 24	2,3,6-TriCB	μg/L	0.000251 UJ	0.000256 UJ	0.000241 UJ	0.000261 UJ	0.000249 UJ			
PCB 25	2.3'.4-TriCB	μg/L	0.000251 UJ	0.000256 UJ	0.000241 UJ	0.000261 UJ	0.000249 UJ			
PCB 26/29	2,3',5-TriCB + 2,4,5-TriCB	μg/L	0.000503 UJ	0.000512 UJ	0.000482 UJ	0.000521 UJ	0.000497 UJ			
PCB 27	2,3',6-TriCB	μg/L	0.000251 UJ	0.000256 UJ	0.000241 UJ	0.000261 UJ	0.000249 UJ			
PCB 31	2,4',5-TriCB	μg/L	0.000278 NJ	0.000256 U	0.000241 U	0.000376 NJ	0.000757			
PCB 32	2,4',6-TriCB	μg/L	0.000251 U	0.000256 U	0.000241 U	0.000261 U	0.000249 U			
PCB 34	2',3,5-TriCB	μg/L	0.000251 U	0.000256 U	0.000241 U	0.000261 U	0.000249 U			
PCB 35	3,3',4-TriCB	μg/L	0.000251 U	0.000256 U	0.000241 U	0.000261 U	0.000249 U			
PCB 36	3,3',5-TriCB	μg/L	0.000251 U	0.000256 U	0.000241 U	0.000261 U	0.000249 U			
PCB 37	3,4,4'-TriCB	μg/L	0.000251 U	0.000256 U	0.000241 U	0.000261 U	0.000392			
PCB 38	3,4,5-TriCB	μg/L	0.000251 U	0.000256 U	0.000241 U	0.000261 U	0.000249 U			
PCB 39	3,4',5-TriCB	μg/L	0.000251 U	0.000256 U	0.000241 U	0.000261 U	0.000249 U			
PCB 40/41/71	2,2',3,3'-TeCB + 2,2',3,4-TeCB + 2,3',4',6-TeCB	μg/L	0.00151 U	0.00154 U	0.00145 U	0.00156 U	0.00149 U			
PCB 42	2,2',3,4'-TeCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U			
PCB 43/73	2,2',3,5-TeCB + 2,3',5',6-TeCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U			
PCB 44/47/65	2,2',3,5'-TeCB + 2,2',4,4'-TeCB + 2,3,5,6-TeCB	μg/L	0.00151 U	0.00154 U	0.00145 U	0.00156 U	0.00149 U			
PCB 45/51	2,2',3,6-TeCB + 2,2',4,6'-TeCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U			
PCB 46	2,2',3,6'-TeCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U			
PCB 48	2,2',4,5-TeCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U			
PCB 49/69	2,2',4,5'-TeCB + 2,3',4,6-TeCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U			
PCB 50/53	2,2',4,6-TeCB + 2,2',5,6'-TeCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U			
PCB 52	2,2',5,5'-TeCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.00125			
PCB 54	2,2',6,6'-TeCB	μg/L	0.000503 UJ	0.000512 UJ	0.000482 UJ	0.000521 U	0.000497 U			
PCB 55	2,3,3',4-TeCB	μg/L	0.000503 UJ	0.000512 UJ	0.000482 UJ	0.000521 U	0.000497 U			
PCB 56	2,3,3',4'-TeCB	μg/L	0.000503 UJ	0.000512 UJ	0.000482 UJ	0.000521 U	0.000497 U			

Table D-2 Basin 53A 2010 Stormwater - PCB Congeners Results

Handbe AAAT Mandbe AAAT Mandbe AAAT Mandbe AAAT Mandbe AAAT Mandbe AAAT VEX. WELDSON WELDSON<				Whole Basin	Northern Branch	Souther	Southern Branch Eastern Branch		JSCS Stormwater SLVs ⁽²⁾			
PGB 07 23.25 FcB opt 0.00051 U 0.000051 U 0.00051 U <t< th=""><th></th><th></th><th></th><th>Within manhole</th><th>Upstream of manhole in 36" Line</th><th>Within manhole</th><th>Upstream of manhole in 42" Line</th><th>Upstream of manhole in 24" Line</th><th>Fish</th><th>Human Health</th><th></th></t<>				Within manhole	Upstream of manhole in 36" Line	Within manhole	Upstream of manhole in 42" Line	Upstream of manhole in 24" Line	Fish	Human Health		
PGB 07 23.25 FcB opt 0.00051 U 0.000051 U 0.00051 U <t< th=""><th>IUPAC Number⁽¹⁾</th><th>Chemical Name</th><th>Units</th><th>12/7/2010</th><th>12/7/2010</th><th>12/7/2010</th><th>12/7/2010</th><th>12/7/2010</th><th>Consumption⁽³⁾</th><th>Ingestion⁽⁴⁾</th><th>Ecological⁽⁵⁾</th></t<>	IUPAC Number ⁽¹⁾	Chemical Name	Units	12/7/2010	12/7/2010	12/7/2010	12/7/2010	12/7/2010	Consumption ⁽³⁾	Ingestion ⁽⁴⁾	Ecological ⁽⁵⁾	
FGS 80 2.3.5 % TeG 0.00007 U 0.00007 U <th< td=""><td>PCB 57</td><td>2.3.3'.5-TeCB</td><td>μq/L</td><td>0.000503 UJ</td><td>0.000512 UJ</td><td>0.000482 UJ</td><td>0.000521 U</td><td>0.000497 U</td><td></td><td></td><td>ě.</td></th<>	PCB 57	2.3.3'.5-TeCB	μq/L	0.000503 UJ	0.000512 UJ	0.000482 UJ	0.000521 U	0.000497 U			ě.	
PGB 80 23.4.4 FrGB - -	PCB 58			0.000503 UJ	0.000512 UJ	0.000482 UJ	0.000521 U	0.000497 U				
FCB 51707476 23.4.5 FrG8 pdL 0.00001 0.000001	PCB 59/62/75	2,3,3',6-TeCB + 2,3,4,6-TeCB + 2,4,4',6-TeCB	μg/L	0.00151 UJ	0.00154 UJ	0.00145 UJ	0.00156 U	0.00149 U				
PERS 2.3.6.5*Frc8 ppL 0.00053 UJ 0.00052 UJ 0.00052 UJ 0.00067 U - - - - PCB 64 2.3.6.5*Frc8 ppL 0.00053 UJ 0.00051 UJ 0.00057 U 0.00067 U - <		2,3,4,4'-TeCB	μg/L	0.000503 UJ	0.000512 UJ	0.000482 UJ	0.000521 U	0.000497 U				
PER-84 23.44 FTCB ipil 0.000512 U 0.00052 U 0.00052 U 0.00059 U 0.00		2,3,4,5-TeCB + 2,3',4',5-TeCB + 2,4,4',5-TeCB + 2',3,4,5-TeCB										
FCB 86 2.3.4.4.TrCB mpl 0.000581 U 0.00042 U 0.00042 U 0.00087 U 0.00087 U -												
PEG 87 2.3.4.8-TrG2B µpL 0.000683 UL 0.000682 UL 0.000687 U 0.000687 U - - - - PEG 87 2.3.6.8-TrG2B µpL 0.000650 UL 0.000647 U 0.000671 U												
FCB 86 2.3.4.5*FCB (a) 0.000682 U 0.000682 U 0.000687 U (a) (b) (c) (c) <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>												
PGB 72 23.5.5.*TeCB pgL 0.000512 U 0.00052 U 0.00052 U 0.00057 U 0.00057 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>												
PCB 77 3.3.4.4*PCB upL 0.000082 U 0.000082 U 0.000087 U 0.000097 U PCB 78 3.3.4.5*PCB upL 0.000083 U 0.000082 U 0.000087 U 0.000097 U												
FCB 78 33.4.5 + TocB ipL 0.000912 U 0.000912 U 0.000912 U 0.000917 U FCB 78 33.4.5 + TocB ipL 0.000912 U 0.000912 U 0.000917 U FCB 80 33.5.5 + TocB ipL 0.000912 U 0.000912 U 0.000917 U												
PCB 79 3.7.4.5.7.PCB mplL 0.00057 U 0.00057 U 0.00057 U 0.000487 U -												
PCB 80 3.3.5.5.7EG2 mpL 0.000512 U 0.000512 U 0.000512 U 0.000467 U -												
PCB 81 3.4.4.5.FGCB μg/L 0.000572 0.000482 0.000572 0.000487 - - - - PCB 82 2.2.3.3.4.PGCB μg/L 0.000572 0.000482 0.000572 0.000487 0.000477 -												
PCB 82 22.3.3.4-P4CB ipiL 0.000571 U 0.000571 U 0.000571 U 0.000471 U PCB 84 22.3.3.5.P4CB ipiL 0.000503 U 0.000512 U 0.000482 U 0.000471 U PCB 84 22.3.3.5.P4CB ipiL 0.00151 U 0.00145 U 0.000462 U 0.00051 U 0.000497 U PCB 849717010119172 22.3.4.5.P4CB + 2.3.4.5.P4CB + 2.3.4.5.P4CB + 2.3.4.5.P4CB ipiL 0.0015 U 0.00046 U 0.0015 U 0.00016 U 0.00098 U <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>												
PCB 83 22,33,5,PeCB ipiL 0.00057 U 0.00057 U 0.00057 U 0.00057 U 0.00067 U PCB 84 22,33,5,PeCB ipiL 0.00050 U 0.00057 U 0.000057 U 0.000057 U												
PEB 84 22,3,35 PreCB ip1 0.000512 0.00082 0.00082 0.000921 0.000997 -												
PCE 88/116/117 2.2/3,4.4 PeCB + 2.3.4.5,6 PeCB μg/L 0.0015 U 0.0015 U 0.0015 U 0.0016 U 0.0016 U 0.0016 U 0.0018 U - - - - PCB 88/97/100/1172 2.3.4.6 PeCB + 2.3.4.5,6 PeCB μg/L 0.00030 U 0.00045 U 0.00045 U 0.00045 U 0.00046 U 0.00047 U - <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>												
PCB 8001/97/10011911 PeCB + 2,3,4,4,6+PeCB + 2,3,4,6,6+PeCB µgL 0.00037 0.00030 U 0.00037 U 0.000361 U 0.000482 U 0.000361 U 0.000497 U							0.00156 U	0.00149 U				
PCB 8891 2.27,34,6+PeCB µg/L 0.00101 0.00072 0.000965 0.00164 0.000995 -	PCB 86/87/97/108/119/1		μ g/L	0.00302 U	0.00307 ^U	0.00289 U	0.00313 U	0.00298 U				
PCB 90/101/13 22:3:4:5-PeCB + 22:4:55-PeCB + 23:3:5:6-PeCB ipL 0.00151 U 0.00145 U 0.00165 U 0.00149 U PCB 92 22:3:5:5:PeCB + 22:3:4:5:PeCB + 22:3:4:6:PeCB + 22:3:6:PeCB + 22:2:2:2:2:2:2:3:6:PeCB + 22:3:6:PeCB + 22:2:	PCB 88/91	2,2',3,4,6-PeCB + 2,2',3,4',6-PeCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U				
PCB 92 2.2°3.5.5-PsCB µgL 0.000512 U 0.000521 U 0.00047 U <	PCB 89	2,2',3,4,6'-PeCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 3939/10/102 2.2,3,3,6,FPeCB + 2,2,3,4,6,FPeCB + 2,2,3,4,6,FPeCB + 2,2,3,4,6,FPeCB + 2,2,3,4,6,FPeCB + 2,2,3,4,6,FPeCB + 1µQL 0.00201 U 0.00193 U 0.00052 U 0.000621 U 0.000497 U PCB 94 2,2,3,5,6,FPeCB µµQL 0.00053 U 0.000512 U 0.000421 U 0.000471 U	PCB 90/101/113	2,2',3,4',5-PeCB + 2,2',4,5,5'-PeCB + 2,3,3',5',6-PeCB	μg/L	0.00151 U	0.00154 U	0.00145 U	0.00156 U	0.00149 U				
PCB 94 2.23,56,F+PCB µg/L 0.000512 U 0.000482 U 0.000521 U 0.000497 U PCB 95 2.23,5,6,F+PCB µg/L 0.000503 U 0.000512 U 0.000621 U 0.000521 U 0.000497 U	PCB 92	2,2',3,5,5'-PeCB	μg/L	0.000503 U		0.000482 U	0.000521 U	0.000497 U				
PCB 95 22/3/5/6/PeCB pg/L 0.000630 U 0.000612 U 0.000621 U 0.00017 PCB 96 22/3/6/5/PeCB pg/L 0.000530 U 0.000512 U 0.000621 U 0.000521 U 0.000520 U -	PCB 93/98/100/102	2,2',3,5,6-PeCB + 2,2',3',4,6-PeCB + 2,2',4,4',6-PeCB + 2,2',4,5,6'-	μg/L	0.00201 U	0.00205 U	0.00193 U	0.00209 U	0.00199 U				
PCB 96 2.2'3.6,6'PeCB µg/L 0.00053 U 0.000512 U 0.000422 U 0.000521 U 0.000522 U -	PCB 94	2,2',3,5,6'-PeCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 99 2.2.4.4;5-PeCB jg/L 0.00053 U 0.000512 U 0.000482 U 0.000521 U 0.000497 U												
PCB 103 2,2',4,5',6-PeCB µg/L 0.000503 U 0.000512 U 0.000482 U 0.000521 U 0.000497 U												
PCB 104 2,2,4,6,6'-PeCB µg/L 0.000503 U 0.000512 U 0.000521 U 0.000497 U PCB 105 2,3,3,4,4'-PeCB µg/L 0.000503 U 0.000512 U 0.000482 U 0.000521 U 0.000497 U PCB 106 2,3,3,4,5-PeCB µg/L 0.000503 U 0.000512 U 0.000482 U 0.000521 U 0.000497 U PCB 107/124 2,3,3,4,5-PeCB + 2,3,4,5,5'-PeCB µg/L 0.00101 U 0.000512 U 0.000482 U 0.00014 U 0.000497 U <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>												
PCB 105 2,3,3,4,4-PeCB µg/L 0.000503 U 0.000512 U 0.000521 U 0.000706 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>												
PCB 106 2,3,3',4,5-PeCB µg/L 0.000503 U 0.000512 U 0.000621 U 0.00047 U												
PCB 107/124 2,3,3',4',5-PeCB + 2',3,4',5'-PeCB µg/L 0.00101 U 0.00102 U 0.000965 U 0.00104 U 0.000995 U <												
PCB 109 2,3,3,4,6-PeCB µg/L 0.000503 U 0.000512 U 0.000521 U 0.00047 U <												
PCB 110/115 2,3,3,4,6-PeCB + 2,3,4,4',6-PeCB µg/L 0.00101 U 0.00102 U 0.000965 U 0.00104 U 0.0021 <												
PCB 111 2,3,3',5,5-PeCB µg/L 0.000503 U 0.000512 U 0.000482 U 0.000521 U 0.00047 U												
PCB 112 2,3,3',5,6-PeCB μg/L 0.000503 U 0.000512 U 0.000521 U 0.000497 U												
PCB 114 2,3,4,4',5-PeCB μg/L 0.000503 U 0.000512 U 0.000521 U 0.00047 U												
PCB 118 2,3',4,4',5-PeCB µg/L 0.000503 U 0.000512 U 0.000521 U 0.00143 <												
PCB 120 2,3',4,5,5'PeCB μg/L 0.000503 U 0.000512 U 0.000521 U 0.00047 U												
PCB 121 2,3',4,5',6-PeCB μg/L 0.000503 U 0.000512 U 0.000521 U 0.00047 U												
PCB 122 2',3,3',4,5-PeCB µg/L 0.000503 U 0.000512 U 0.000521 U 0.00047 U												
PCB 123 2',3,4,4',5-PeCB µg/L 0.000503 U 0.000512 U 0.000521 U 0.00047 U												
PCB 126 3,3',4,4',5-PeCB μg/L 0.000503 U 0.000512 U 0.000521 U 0.00047 U												
								0.000497 U				
PCB 128/166 2,2',3,3',4,4'-HxCB + 2,3,4,4',5,6-HxCB μg/L 0.00101 U 0.00102 U 0.00095 U 0.00104 U 0.00095 U	PCB 127	3,3',4,5,5'-PeCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
	PCB 128/166	2,2',3,3',4,4'-HxCB + 2,3,4,4',5,6-HxCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U				
PCB 129/138/163 2,2',3,3',4,5-HxCB + 2,2',3,4',5-HxCB + 2,3',3',4',5-HxCB + μg/L 0.00151 U 0.00154 U 0.00156 U 0.00156 U 0.00217	PCB 129/138/163	2,2',3,3',4,5-HxCB + 2,2',3,4,4',5'-HxCB + 2,3,3',4',5,6-HxCB	μg/L	0.00151 U	0.00154 U	0.00145 U	0.00156 U	0.00217				

Table D-2 Basin 53A 2010 Stormwater - PCB Congeners Results

			Whole Basin	Northern Branch	Souther	rn Branch	Eastern Branch	JSCS	JSCS Stormwater SLVs ⁽²⁾		
			Manhole AAA170 Within manhole W10L059-01	Manhole AAA179 Upstream of manhole in 36" Line W10L059-05	Manhole AAA188 Within manhole W10L059-02	Manhole AAA179 Upstream of manhole in 42" Line W10L059-03	Manhole AAA179 Upstream of manhole in 24" Line W10L059-04	Human Health Fish	Human Health		
IUPAC Number ⁽¹⁾	Chemical Name	Units	12/7/2010	12/7/2010	12/7/2010	12/7/2010	12/7/2010	Consumption ⁽³⁾	Ingestion ⁽⁴⁾	Ecological ⁽⁵⁾	
PCB 130	2,2',3,3',4,5'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 131	2,2',3,3',4,6-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 132	2,2',3,3',4,6'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000704				
PCB 133	2,2',3,3',5,5'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 134/143	2,2',3,3',5,6-HxCB + 2,2',3,4,5,6'-HxCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U				
PCB 135/151	2,2',3,3',5,6'-HxCB + 2,2',3,5,5',6-HxCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U				
PCB 136	2,2',3,3',6,6'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 137	2,2',3,4,4',5-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 139/140	2,2',3,4,4',6-HxCB + 2,2',3,4,4',6'-HxCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U				
PCB 141	2,2',3,4,5,5'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 142	2,2',3,4,5,6-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 144	2,2',3,4,5',6-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 145	2,2',3,4,6,6'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 146	2,2',3,4',5,5'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 147/149 PCB 148	2,2',3,4',5,6-HxCB + 2,2',3,4',5',6-HxCB 2,2',3,4',5,6'-HxCB	μg/L	0.00101 U 0.000503 U	0.00102 U 0.000512 U	0.000965 U 0.000482 U	0.00104 U 0.000521 U	0.00131 0.000497 U				
PCB 146	2,2',3,4',6,6'-HxCB	μg/L μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 150	2,2',3,5,6,6'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 153/168	2,2',4,4',5,5'-HxCB + 2,3',4,4',5',6-HxCB	μg/L	0.000505 U 0.00101 U	0.000312 U	0.000965 U	0.00104 U	0.00138				
PCB 154	2,2',4,4',5,6'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 155	2,2',4,4',6,6'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 156/157	2,3,3',4,4',5-HxCB + 2,3,3',4,4',5'-HxCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U				
PCB 158	2,3,3',4,4',6-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 159	2,3,3',4,5,5'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 160	2,3,3',4,5,6-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 161	2,3,3',4,5',6-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 162	2,3,3',4',5,5'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 164	2,3,3',4',5',6-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 165	2,3,3',5,5',6-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 167	2,3',4,4',5,5'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 169	3,3',4,4',5,5'-HxCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 170	2,2',3,3',4,4',5-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 171/173	2,2',3,3',4,4',6-HpCB + 2,2',3,3',4,5,6-HpCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U				
PCB 172	2,2',3,3',4,5,5'-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 174	2,2',3,3',4,5,6'-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 175	2,2',3,3',4,5',6-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 176	2,2',3,3',4,6,6'-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 177	2,2',3,3',4',5,6-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 178	2,2',3,3',5,5',6-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 179	2,2',3,3',5,6,6'-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 180/193	2,2',3,4,4',5,5'-HpCB + 2,3,3',4',5,5',6-HpCB	μg/L	0.00101 U	0.00102 U	0.000965 U	0.00104 U	0.000995 U				
PCB 181	2,2',3,4,4',5,6-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 182 PCB 183/185	2,2',3,4,4',5,6'-HpCB	μg/L	0.000503 U 0.00101 U	0.000512 U 0.00102 U	0.000482 U 0.000965 U	0.000521 U 0.00104 U	0.000497 U 0.000995 U				
PCB 183/185 PCB 184	2,2',3,4,4',5',6-HpCB + 2,2',3,4,5,5',6-HpCB 2,2',3,4,4',6,6'-HpCB	μg/L μg/L	0.00101 U 0.000503 U	0.00102 U 0.000512 U	0.000965 U 0.000482 U	0.00104 U 0.000521 U	0.000995 U 0.000497 U				
PCB 184 PCB 186	2,2',3,4,4,6,6'-НрСВ	μg/L μg/L	0.000503 U	0.000512 U 0.000512 U	0.000482 U 0.000482 U	0.000521 U 0.000521 U	0.000497 U 0.000497 U				
PCB 186 PCB 187	2,2',3,4,5,6,6-HpCB	μg/L	0.000503 U	0.000512 U 0.000512 U	0.000482 U 0.000482 U	0.000521 U 0.000521 U	0.000497 U 0.000497 U				
PCB 187	2,2,3,4,5,5,6,6'-НрСВ	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 189	2,2,3,4,5,6,6-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 190	2,3,3',4,4',5,6-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 190	2,3,3',4,4',5',6-HpCB	μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
PCB 192	2,3,3',4,5,5',6-HpCB	μg/L μg/L	0.000503 U	0.000512 U	0.000482 U	0.000521 U	0.000497 U				
1 00 132	2,0,0,7,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,	μg/L	0.000000 0	0.000012 0	0.000402 0	0.000321 0	0.000437 0				

Table D-2 Basin 53A 2010 Stormwater - PCB Congeners Results

				Northern Branch	Southe	rn Branch	Eastern Branch	JSCS	Stormwater SL	Vs ⁽²⁾
			Manhole AAA170 Within manhole W10L059-01	Manhole AAA179 Upstream of manhole in 36" Line W10L059-05	Manhole AAA188 Within manhole W10L059-02	Manhole AAA179 Upstream of manhole in 42" Line W10L059-03	Manhole AAA179 Upstream of manhole in 24" Line W10L059-04	Human Health Fish	Human Health	
IUPAC Number ⁽¹⁾	Chemical Name	Units	12/7/2010	12/7/2010	12/7/2010	12/7/2010	12/7/2010	Consumption ⁽³⁾	Ingestion ⁽⁴⁾	Ecological ⁽⁵⁾
PCB 194	2,2',3,3',4,4',5,5'-OcCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 195	2,2',3,3',4,4',5,6-OcCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 196	2,2',3,3',4,4',5,6'-OcCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 197/200	2,2',3,3',4,4',6,6'-OcCB + 2,2',3,3',4,5,6,6'-OcCB	μg/L	0.00151 U	0.00154 U	0.00145 U	0.00156 U	0.00149 U			
PCB 198/199	2,2',3,3',4,5,5',6-OcCB + 2,2',3,3',4,5,5',6'-OcCB	μg/L	0.00151 U	0.00154 U	0.00145 U	0.00156 U	0.00149 U			
PCB 201	2,2',3,3',4,5',6,6'-OcCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 202	2,2',3,3',5,5',6,6'-OcCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 203	2,2',3,4,4',5,5',6-OcCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 204	2,2',3,4,4',5,6,6'-OcCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 205	2,3,3',4,4',5,5',6-OcCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 206	2,2',3,3',4,4',5,5',6-NoCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 207	2,2',3,3',4,4',5,6,6'-NoCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 208	2,2',3,3',4,5,5',6,6'-NoCB	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
PCB 209	Decachlorobiphenyl	μg/L	0.000754 U	0.000768 U	0.000724 U	0.000782 U	0.000746 U			
	Total Monochlorobiphenyls	μg/L	ND	ND	ND	ND	ND			
	Total Dichlorobiphenyls	μg/L	ND	ND	ND	ND	0.000308 J			
	Total Trichlorobiphenyls	μg/L	0.000278 NJ	ND	ND	0.000376 NJ	0.00256 J			
	Total Tetrachlorobiphenyls	μg/L	ND	ND	ND	ND	0.00284			
	Total Pentachlorobiphenyls	μg/L	ND	ND	ND	ND	0.00600			
	Total Hexachlorobiphenyls	μg/L	ND	ND	ND	ND	0.00556			
	Total Heptachlorobiphenyls	μg/L	ND	ND	ND	ND	ND			
	Total Octachlorobiphenyls	μg/L	ND	ND	ND	ND	ND			
	Total Nonachlorobiphenyls	μg/L	ND	ND	ND	ND	ND			
	Total Decachlorobiphenyls	μg/L	ND	ND	ND	ND	ND			
	Total PCBs ^(b)	μg/L	0.000278 NJ	ND	ND	0.000376 NJ	0.0173 J	0.000064	0.034	0.014

⁽²⁾ JSCS SLVs = Portland Harbor Joint Source Control Strategy Screening Level Values (DEQ/EPA Final December 2005, Amended July 2007).

values are available, then Oak Ridge National Laboratory Tier II SCV Technology Benchmark values are listed for the constituent.

(4) The SLVs for chemicals in water for human ingestion represent the most conservative value between EPA's MCLs and Region 9 PRGs.

(6) Total homologs and total congener concentrations are calculated by assigning "0" to undetected and EMPC-qualified constituents.

Highlighted value has been selected by DEQ for initial upland source control screening evaluations.

(3) The SLVs for chemicals in water taken up by fish for human consumption represent EPA's NRWQC values. If no NRWQC values are available, then DEQ's AWQC values are listed for the constituent.

(5) The SLVs for chemicals in water for ecological exposure represent EPA's NRWQC values. If no NRWQC values are available, then DEQ's AWQC values are listed for the constituent. If no AWQC

Notes:

MoCB = Monochlorobiphenyl

DiCB = Dichlorobiphenyl

TriCB = Trichlorobiphenyl

TeCB = Tetrachlorobiphenyl

PeCB = Pentachlorobiphenyl

HeCB = Hexachlorobiphenyl

HpCB = Heptachlorobiphenyl

OcCB = Octachlorobiphenyl

NoCB = Nonachlorobiphenyl

-- No JSCS screening level available.

 $\mu g/L = Micrograms$ per liter

J = Congener value is estimated due to matrix interference or an internal standard recovery outside of method control limits. The total homolog and total PCB value includes one or more estimated value(s). ND = Not detected

NJ = Tentatively identified and estimated. Congener 31 in samples W10L059-01 and W10L059-02 is tentatively identified and estimated because it was the only congener detected in the sample, which is unlikely to occur.

bold = Concentration exceeds DEQ SLV.

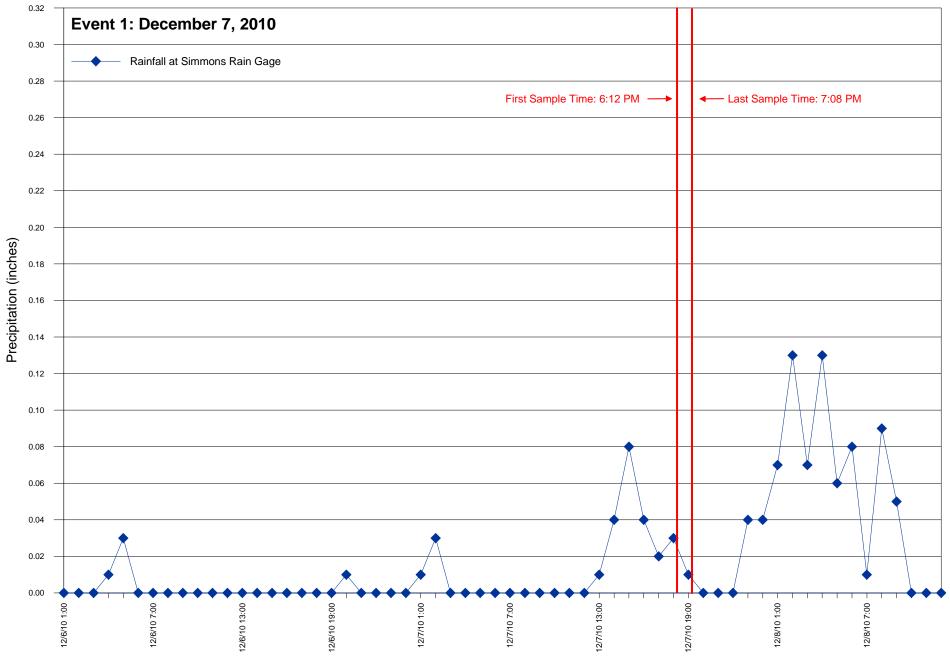
⁽¹⁾IUPAC = International Union of Pure and Applied Chemistry.

U = The analyte was not detected above the reported sample quantification limit.

Figure



Figure D-2 Outfall 53A Storm Event Precipitation Graph



Date and Time (PST)

Attachment D-1 Field Notes This page intentionally blank

City of Portland Environmental Services

DAILY FIELD REPORT



Page _ Project Basin 53A Stormwitch Project No. Location Basin 53A Date 12/7/10 By MJS, PTB. subject Stormuster Sampling 1400 - light but steady rain beginning. 1630 - continued light but steady rain, NO.14" of roin since 1400, Breckived go-ahead to sample - Will collect pasm 43 sam Frist. 1807 - on site at N Riversate + Rangely To continued steady rain and good flow coming from all 3 stormlines. 1812 collected saple from 53A-SW3 (south line) 1833 collected sample From 53A-SWY (cost/middle line) 1832 collected sample from SJA_SW5 (Dorth ime) collected all 3 samples with swing arm samples 1846 onsteat S3A SWI to continued light rurn 1852 collected sample from 53A-SWI using a beaker of ships 1908 - on site at 534 - SW2 to decreasing light rain still abundant runoff in street and abundant flow in fine sediment 15 accumulated in the floor of the pipe, but was saccessfully excluded from the sample. Sample collected at 1914 Attachments

Attachment D-2 Laboratory Reports and Data Review Memorandum

(on CD only)



55 SW Yamhill Street, Suite 400 Portland, OR 97204 P: 503.239.8799 F: 503.239.8940 info@gsiwatersolutions.com www.gsiwatersolutions.com

Laboratory Data QA/QC Review Upland Source Control Investigation City Outfall Basin 53A

To:FileFrom:Andrew Davidson, GSI Water Solutions, Inc.Date:October 17, 2011

This memorandum presents a quality assurance/quality control (QA/QC) review of the laboratory data generated from a source control investigation sampling event conducted by the City of Portland (City) in Outfall Basin 53A on December 7, 2010. Five stormwater samples (W10L059-01, W10L059-02, W10L059-03, W10L059-04 and W10L059-05) were collected and submitted for analyses.

The laboratory analyses for these source control program samples were completed by the City's Bureau of Environmental Services (BES) Water Pollution Control Laboratory (WPCL) and a subcontracted laboratory. The following laboratories conducted the analyses listed:

- BES WPCL
 - o Metals EPA 200.8
 - Mercury WPCL SOP M-10.02
 - Total Suspended Solids SM 2540D
- Pace Analytical Services (Pace)
 - Polychlorinated Biphenyls (PCB) Congeners EPA 1668A

The WPCL laboratory report and the subcontracted laboratory reports for all analyses associated with this sampling event are attached.

The following QA/QC review of the analytical data is based on the available documentation provided by WPCL and the subcontracted laboratories. The QA/QC review of the analytical data consisted of reviewing the following elements for each laboratory report, if applicable and/or available:

• Chain-of-custody – for completeness and continuous custody

- Analysis conducted within holding times
- Chemicals of interest detected in method blanks
- Internal standard recoveries within accuracy control limits
- Matrix spike and matrix spike duplicate (MS/MSD) sample results within laboratory control limits
- Laboratory control and duplicate laboratory control (LC/DLC) sample recoveries within laboratory control limits
- Relative percent differences (RPDs) for laboratory duplicate samples within laboratory control limits.

The results of the QA/QC review of the laboratory reports are presented below.

Chain-of-Custody

The chain-of-custody forms showed continuous custody of the samples. The chain-of-custody procedures appear to have been adequate indicating that sample integrity was maintained throughout the sample collection and delivery process.

Analysis Holding Times

Samples analyzed for PCB congeners were extracted seven days after the recommended extraction holding time of seven days. However, sample preservation procedures were adequate and the samples were analyzed well within the recommended holding times for PCB sample analysis. Accordingly, the data are not qualified further. Sample extraction and analysis times for metals, mercury, and TSS analyses were all within recommended holding times.

Method Blanks

Method blanks were processed during the laboratory analyses of metals, mercury and PCB congeners. No analytes were detected in the method blanks.

Internal Standard Recoveries

Isotopically-labeled internal standards were processed during the subcontracted laboratory analysis of PCB congeners. Several internal standard recoveries were recovered at a level below the method-specified target range. These values are flagged "R" in the subcontracted laboratory report. Although, the data were automatically corrected for variation in recovery and accurate values were generally obtained, congener data associated with flagged internal standard recoveries are qualified as estimates ("J"). Pace reported that samples with low internal standard recoveries could not be re-extracted due to inadequate sample volume.

Matrix Spike/Matrix Spike Duplicates

MS samples were processed during the laboratory analysis of metals and mercury. All MS sample recoveries were within laboratory control limits.

Laboratory Control Samples

LC samples were processed during the laboratory analysis of metals, mercury and PCB congeners. A DLC sample was processed during the analysis of PCB congeners. All LC and DLC sample recoveries were within method-specified control limits. RPDs for the PCB congener analysis were within method-specified control limits.

Laboratory Duplicate Samples

Laboratory duplicate samples were processed during the TSS, metals, and mercury analyses. RPDs for all duplicate samples were within laboratory control limits.

Other

PACE reports that interfering substances impacted the determinations of selected native and labeled PCB congeners. The affected congeners are flagged "I" in the subcontracted laboratory report and qualified as estimated possible concentrations "EMPC" to indicated that incorrect isotope ratios were obtained.



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



18 January 2011 Linda Scheffler Director's Office RE: Portland Harbor

Enclosed are the results of analyses for samples received by the laboratory on 12/07/10 19:37. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Renee Chauvin Laboratory Coordinator QA/QC



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



LABORATORY ANALYSIS REPORT

, ,	Portland Harbor W10L059 12/07/10 19:37 FO				Client: Project M WQDB #:	gr: Li	irector's (nda Sche anus329			
							Sam	nle Colle	ction Date	
Sample	Laborat	ory ID	Matrix		Туре		Star	-	End	Qualifier
53A_SW1	W10L05		Stormwater		Grab		12/07/10	18:52	12/07/10 18:52	
53A_SW2	W10L05	59-02	Stormwater		Grab		12/07/10	19:08	12/07/10 19:08	
53A_SW3	W10L05	59-03	Stormwater		Grab		12/07/10	18:12	12/07/10 18:12	
53A_SW4	W10L05	59-04	Stormwater		Grab		12/07/10	18:23	12/07/10 18:23	
53A_SW5	W10L05	59-05	Stormwater		Grab		12/07/10	18:32	12/07/10 18:32	
Analyte	Re	sult	MRL	Units	Dilution	Batch	Prepared	Analyzed	I Method	Qualifier
General Chemist										
Total Suspended Sol	lids									
53A_SW1 : W10L0 Total suspended so		29	2	mg/L		B10L139	12/08/10	12/09/10	Sampled: 12/07/10 SM 2540D	18:52
53A_SW2:W10L0 Total suspended so		5	2	mg/L		B10L139	12/08/10	12/09/10	Sampled: 12/07/10 SM 2540D	19:08
53A_SW3:W10L0 Total suspended so		22	2	mg/L		B10L139	12/08/10	12/09/10	Sampled: 12/07/10 SM 2540D	18:12
53A_SW4 : W10L0 Total suspended so		61	2	mg/L		B10L139	12/08/10	12/09/10	Sampled: 12/07/10 SM 2540D	18:23
53A_SW5 : W10L Total suspended so		7	2	mg/L		B10L139	12/08/10	12/09/10	Sampled: 12/07/10 SM 2540D	18:32

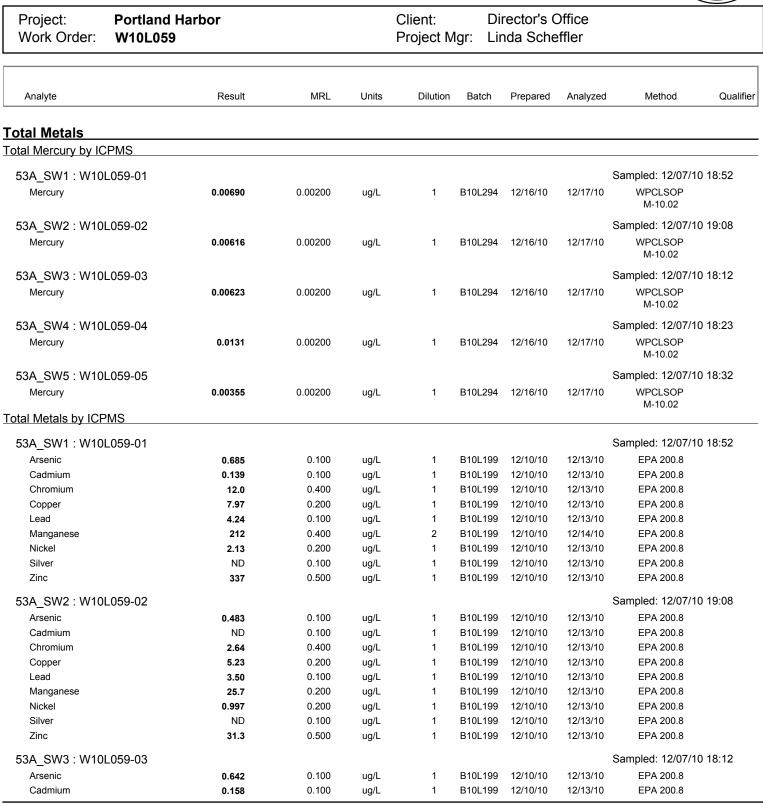
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andline

Renee Chauvin, Laboratory Coordinator QA/QC



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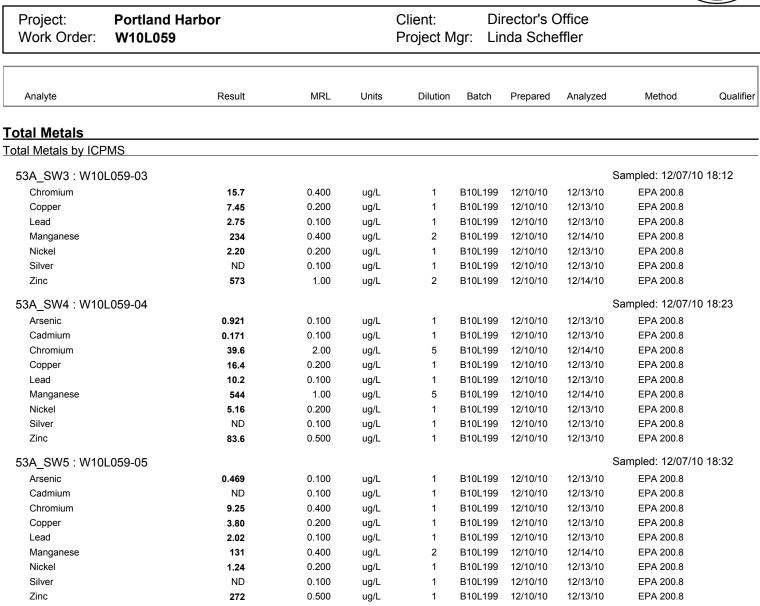


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Renee Chauvin, Laboratory Coordinator QA/QC



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Reported:01/18/11 09:56

Renee Chauvin, Laboratory Coordinator QA/QC





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,	Project: Portland Harbor Work Order: W10L059			Client: Project	Mar	Director's			
	101039			FIUJEC	. wy.				
		General Chemis	stry - Q	uality Co	ontrol R	eport			
Analyte	Result	MRL	Units	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Suspended Sol	ids - Batch B10L139								
Duplicate (B10L139-DU	P1)	Source: W10	L058-01						
Total suspended solids	10	2	mg/L		9		9 (20)	12/08/10 :12/09/10	
		Total Metals	- Qual	ity Contr	ol Repo	ort			
Analyte	Result	MRL	Units	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Mercury by ICP	MS - Batch B10L294								
Blank (B10L294-BLK1)									
Mercury	ND	0.00200	ug/L					12/16/10 :12/17/10	
_CS (B10L294-BS1)		0.00200	ug, 2						
	0.04004			0.0200		07 (95 105)		10/16/10 -10/17/10	
Mercury	0.01931	0.00200	ug/L	0.0200		97 (85-125)		12/16/10 :12/17/10	
Duplicate (B10L294-DU	P1)	Source: W10	L059-01						
Mercury	0.006300	0.00200	ug/L		0.006898		9 (20)	12/16/10 :12/17/10	
Matrix Spike (B10L294-I	MS1)	Source: W10	L059-01						
Mercury	0.02662	0.00200	ug/L	0.0222	0.006898	89 (70-130)		12/16/10 :12/17/10	
Total Metals by ICPM	S - Batch B10L199								
Blank (B10L199-BLK1)									
Arsenic	ND	0.100	ug/L					12/10/10 :12/13/10	
Cadmium	ND	0.100	ug/L					12/10/10 :12/13/10	
Chromium	ND	0.400	ug/L					12/10/10 :12/13/10	
Copper	ND	0.200	ug/L					12/10/10 :12/13/10	
Lead	ND	0.100	ug/L					12/10/10 :12/13/10	
Manganese	ND	0.200	ug/L					12/10/10 :12/13/10	
Nickel	ND	0.200	ug/L					12/10/10 :12/13/10	
Silver	ND	0.100	ug/L					12/10/10 :12/13/10	
Zinc	ND	0.500	ug/L					12/10/10 :12/13/10	
LCS (B10L199-BS1)									
Arsenic	10.22	0.100	ug/L	10.0		102 (85-115)		12/10/10 :12/13/10	
Cadmium	9.982	0.100	ug/L	10.0		100 (85-115)		12/10/10 :12/13/10	
		0.400	ug/L	10.0		99 (85-115)		12/10/10 :12/13/10	

Canlline____

Renee Chauvin, Laboratory Coordinator QA/QC

case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.



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



Project: Portland Harbor Work Order: W10L059

Client: Director's Office Project Mgr: Linda Scheffler

Total Metals - Quality Control Report

Analyte	Result	MRL	Units	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch	n B10L199								
LCS (B10L199-BS1)									
Copper	10.23	0.200	ug/L	10.0		102 (85-115)		12/10/10 :12/13/10	
Lead	9.716	0.100	ug/L	10.0		97 (85-115)		12/10/10 :12/13/10	
Manganese	9.696	0.200	ug/L	10.0		97 (85-115)		12/10/10 :12/13/10	
Nickel	10.02	0.200	ug/L	10.0		100 (85-115)		12/10/10 :12/13/10	
Silver	9.958	0.100	ug/L	10.0		100 (85-115)		12/10/10 :12/13/10	
Zinc	50.56	0.500	ug/L	50.0		101 <i>(85-115)</i>		12/10/10 :12/13/10	
Duplicate (B10L199-DUP1)		Source: W10	L086-03						
Arsenic	0.7503	0.100	ug/L		0.7542		0.5 (20)	12/10/10 :12/13/10	
Cadmium	ND	0.100	ug/L		ND		(20)	12/10/10 :12/13/10	
Chromium	1.020	0.400	ug/L		0.9988		2 (20)	12/10/10 :12/13/10	
Copper	7.468	0.200	ug/L		7.225		3 (20)	12/10/10 :12/13/10	
Lead	2.156	0.100	ug/L		2.195		2 (20)	12/10/10 :12/13/10	
Manganese	25.66	0.200	ug/L		25.76		0.4 (20)	12/10/10 :12/13/10	
Nickel	2.779	0.200	ug/L		2.784		0.2 (20)	12/10/10 :12/13/10	
Silver	0.3996	0.100	ug/L		0.4062		2 (20)	12/10/10 :12/13/10	
Zinc	38.82	0.500	ug/L		39.06		0.6 (20)	12/10/10 :12/13/10	
Duplicate (B10L199-DUP3)		Source: W10	L059-02						
Arsenic	0.4367	0.100	ug/L		0.4826		10 <i>(20)</i>	12/10/10 :12/13/10	
Cadmium	ND	0.100	ug/L		ND		(20)	12/10/10 :12/13/10	
Chromium	2.433	0.400	ug/L		2.643		8 (20)	12/10/10 :12/13/10	
Copper	5.170	0.200	ug/L		5.232		1 (20)	12/10/10 :12/13/10	
Lead	3.317	0.100	ug/L		3.500		5 (20)	12/10/10 :12/13/10	
Manganese	24.73	0.200	ug/L		25.69		4 (20)	12/10/10 :12/13/10	
Nickel	0.9571	0.200	ug/L		0.9969		4 (20)	12/10/10 :12/13/10	
Silver	ND	0.100	ug/L		ND		(20)	12/10/10 :12/13/10	
Zinc	31.10	0.500	ug/L		31.31		0.7 (20)	12/10/10 :12/13/10	
Matrix Spike (B10L199-MS1)		Source: W10	L086-03						
Arsenic	21.91	0.100	ug/L	20.0	0.7542	106 (70-130)		12/10/10 :12/13/10	
Cadmium	19.62	0.100	ug/L	20.0	ND	98 (70-130)		12/10/10 :12/13/10	
Chromium	21.13	0.400	ug/L	20.0	0.9988	101 <i>(70-130)</i>		12/10/10 :12/13/10	
Copper	28.57	0.200	ug/L	20.0	7.225	107 (70-130)		12/10/10 :12/13/10	
Lead	21.86	0.100	ug/L	20.0	2.195	98 (70-130)		12/10/10 :12/13/10	
Manganese	46.25	0.200	ug/L	20.0	25.76	102 (70-130)		12/10/10 :12/13/10	
Nickel	23.54	0.200	ug/L	20.0	2.784	104 (70-130)		12/10/10 :12/13/10	
Silver	20.28	0.100	ug/L	20.0	0.4062	99 (70-130)		12/10/10 :12/13/10	

Reported:01/18/11 09:56

Mu. CA2

Renee Chauvin, Laboratory Coordinator QA/QC



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



Project: Portland Harbor Work Order: W10L059 Client: Director's Office Project Mgr: Linda Scheffler

Total Metals - Quality Control Report

Analyte	Result	MRL U	Spike Inits Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch	B10L199							
Matrix Spike (B10L199-MS1)		Source: W10L08	6-03					
Zinc	137.1	0.500 ι	ıg/L 100	39.06	98 (70-130)		12/10/10 :12/13/10	
Matrix Spike (B10L199-MS2)		Source: W10L059-02						
Arsenic	21.09	0.100 ι	ıg/L 20.0	0.4826	103 <i>(70-130)</i>		12/10/10 :12/13/10	
Cadmium	19.29	0.100 ι	ıg/L 20.0	ND	96 (70-130)		12/10/10 :12/13/10	
Chromium	22.02	0.400 ι	ıg/L 20.0	2.643	97 (70-130)		12/10/10 :12/13/10	
Copper	25.87	0.200 ι	ıg/L 20.0	5.232	103 (70-130)		12/10/10 :12/13/10	
Lead	23.84	0.100 ι	ıg/L 20.0	3.500	102 (70-130)		12/10/10 :12/13/10	
Manganese	131.2	0.400 ι	ug/L 100	25.69	106 (70-130)		12/10/10 :12/14/10	
Nickel	21.46	0.200 ι	ıg/L 20.0	0.9969	102 (70-130)		12/10/10 :12/13/10	
Silver	19.85	0.100 ι	ıg/L 20.0	ND	99 (70-130)		12/10/10 :12/13/10	
Zinc	128.8	0.500 u	ıg/L 100	31.31	98 (70-130)		12/10/10 :12/13/10	

Qualifiers and 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:01/18/11 09:56

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Renee Chauvin, Laboratory Coordinator QA/QC

Work Order #: WIDL059 Collected By: MJ5, PTB Bureau of Environmental Services City of Portland Chain-of-Custody Water Pollution Control Laboratory 6543 N. Burlington Ave. Portland, Oregon 97203-4552 Sample Custodian. (503) 823-5696 General Lab: (503) 823-5681 Ż

					Remarks	AAA170	AAA188	AAA179-S	AA179-E	AA179-N						Date:	Jime:
				-	# of Containers											Received By: Signature:	Printed Name:
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Project Name:		Special Instructions:	Basin 53A Stormwater		Location ID	53A_SW1	53A_SW2	53A_SW3	53A_SW4	53A_SW5						ature:	ed Name: Mart + 5. [1. Var

Q.

Date: 13/7/10



www.pacelabs.com

Report Prepared for:

Darrell Auvil Test America 9405 SW Nimbus Avenue Beaverton OR 97008

REPORT OF LABORATORY ANALYSIS FOR PCBs

Report Prepared Date: January 10, 2011

Pace Analytical Services, Inc. 1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

Report Information:

Pace Project #: 10145271 Sample Receipt Date: 12/14/2010 Client Project #: PTL0344 Client Sub PO #: N/A State Cert #: MN200001-005

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed by:

January 10, 2011

Scott Unze, Project Manager (612) 607-6383 (612) 607-6444 (fax) scott.unze@pacelabs.com



Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.





Pace Analytical Services, Inc. 1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on five samples submitted by a representative of Test America - Portland. The samples were analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to approximately 0.25-0.75 parts per trillion and were adjusted for the amount of sample extracted.

The isotopically-labeled PCB internal standards in the sample extracts were recovered at 0-108%. Selected analytes were recovered at levels below the target range for this method and were flagged "R" on the results tables. Since the quantification of the native PCB congeners was based on internal standard and isotope dilution methodology, the data were automatically corrected for variation in recovery and accurate values were generally obtained.

The samples would typically have been re-extracted due to the low recoveries obtained for the early analytes, however, only a single aliquot of each was available. The client was contacted to discuss this matter and it was agreed that the results would be reported with appropriate flags rather than resubmitting the samples to repeat the analyses. The results should be considered generally accurate to the reporting limits, however, increased variability is to be expected where recoveries in the low single digits were obtained. Noise messurements were taken on those analytes with weak internal standard signals to verify that the reporting limits were achieved even in cases of low internal standard recovery. In some cases elevated reporting limits were reported. If replacement samples are provided within 30 days of the date of this report, the analyses will be repeated to verify the accuracy of the results for the analytes associated with internal standards that yielded poor recoveries.

Interfering substances impacted the determinations of selected native and labeled PCB congeners. The affected values were flagged "I" to indicate that incorrect isotope ratios were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCB congeners at the reporting limits. This indicates that the sample preparation steps did not significantly impact the measurement of the native congeners in the field samples.

Laboratory spike samples were also prepared with the sample batch using clean water that had been fortified with native standards. The results show that the spiked native compounds were recovered at 97-122%, with relative percent differences of 0.0-6.9%. These results indicate high degrees of accuracy and precision for these determinations. Matrix spikes were not prepared with the sample batch.

REPORT OF LABORATORY ANALYSIS

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Minnesota Laboratory Certifications

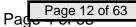
Authority	Certificate #	Authority	Certificate #
Alabama	40770	Montana	92
Alaska	MN00064	Nebraska	
Arizona	AZ0014	Nevada	MN000642010A
Arkansas	88-0680	New Jersey (NE	MN002
California	01155CA	New Mexico	MN00064
Colorado	MN00064	New York (NEL	11647
Connecticut	PH-0256	North Carolina	27700
EPA Region 5	WD-15J	North Dakota	R-036
EPA Region 8	8TMS-Q	Ohio	4150
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (DNR)	959	Oklahoma	D9922
Guam	09-019r	Oregon (ELAP)	MN200001-005
Hawaii	SLD	Oregon (OREL	MN200001-005
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennesee	2818
lowa	368	Tennessee	02818
Kansas	E-10167	Texas	T104704192-08
Kentucky	90062	Utah (NELAP)	PAM
Louisiana	LA0900016	Virginia	00251
Maine	2007029	Washington	C755
Maryland	322	West Virginia	9952C
Michigan	9909	Wisconsin	999407970
Minnesota Mississippi	027-053-137 MN00064	Wyoming	8TMS-Q

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management



SUBCONTRACT ORDER

10145271

Page 13 of 63

Р

TestAmerica Portland

PTL0344

SENDING LABORATOR	<u>Y:</u>	- · · · · · · · · · · · · · · · · · · ·	RECEIVING LABORA	TORY:
TestAmerica Portland 9405 SW Nimbus Ave. Beaverton, OR 97008 Phone: (503) 906-9200 Fax: (503) 906-9210 Project Manager: Darrel	l Auvil		Pace Analytical Service 1700 Elm Street Suite Minneapolis, MN 5541 Phone :(612) 607-1700 Fax: (612) 607-6444	200 4
• • • • •			STANDARD	THT.
Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: PTL0344-01	Water	Sampled:12/07/10 18:52		
1668 PCB 209 Congeners - Containers Supplied: 1L Amber - Unpres. (A)	SUX01/05/11 08	:00 06/05/11 18:52	001	209 congeners to PACE \$77500 lash
Sample ID: PTL0344-02	Water	Sampled:12/07/10 19:08		
1668 PCB 209 Congeners - Containers Supplied: 1L Amber - Unpres. (A)	SUI01/05/11 08	:00 06/05/11 19:08	COC	209 congeners to PACE
Sample ID: PTL0344-03	Water	Sampled:12/07/10 18:12		
1668 PCB 209 Congeners - Containers Supplied: 1L Amber - Unpres. (A)	SU101/05/11 08	00 06/05/11 18:12	200	209 congeners to PACE
Sample ID: PTL0344-04	Water	Sampled:12/07/10 18:23		
1668 PCB 209 Congeners - Containers Supplied: 1L Amber - Unpres. (A)	SU101/05/11 08	00 06/05/11 18:23	OOL	209 congeners to PACE
Sample ID: PTL0344-05	Water	Sampled:12/07/10 18:32		
1668 PCB 209 Congeners - Containers Supplied: 1L Amber - Unpres. (A)	SU/01/05/11 08	00 06/05/11 18:32	005	209 congeners to PACE
				Muh
Reladed By	Yr_	2 13/10 Date	Reperved By	Date T-1.7%
Released By		Date	Received By	Date

			an an an an an an an an an an an an an a
Sa	mple Conditic	n Upon Receipt	
Face Analytical Client Name	: Test Am	erica I	Project # 10(4527)
1			
Courler: D Fed Ex □ UPS □ USPS □ Clic Tracking #: <u>4170 `7526 70</u> 44	ent 🛛 Commercia	I D Pace Other	Optional Proj. Due Dete
Custody Seal on Cooler/Box Present: K yes	no Sea	ls intact: 12 yes	no Proj. Name
Packing Material: 🔲 Bubble Wrap 🕅 Bubble	e Bage 🔲 None	Other	Temp Blank: Yes 🖌 No
Thermometer Used 80344042 or 79425	Type of Ice: We	Blue None	Samples on ice, cooling process has begun
Cooler Temperature	Biological Tissu	e is Frozen: Yes No	Date and Initials of person examining contents: 12~14/0 AIR
Femp should be above freezing to 6°C		Comments:	
Chain of Custody Present:		A 1.	
Chain of Custody Filled Out:		A 2.	·
Chain of Custody Relinquished:			
Sampler Name & Signature on COC:		4.	<u></u>
Samples Arrived within Hold Time:	Kiyes []No []N/	5.	
Short Hold Time Analysis (<72hr):		6.	
lush Turn Around Time Requested:	Cives Kano Cinu	7.	· · · · · · · · · · · · · · · · · · ·
Sufficient Volume:		8.	
Correct Containers Used:	Kating the second se	9.	
-Pace Containers Used:			
Containers Intact:		10.	
iltered volume received for Dissolved tests	Dyes (Strio DN/A	11.	
Sample Labels match COC:	₩Yes □No □N/A	12.	
-Includes date/time/ID/Analysis Matrix:	WT		
Il containers needing acid/base preservation have been necked. Noncompliance are noted in 13.	DYes DNo XIN/A		
Il containers needing preservation are found to be in opplance with EPA recommendation.		Samp #	
	, DYes XXNo	Initial when	Lot # of added
xceptions: VOA,Coliform, TOC, Oll and Grease, WI-DRO (wate	1		preservative
amples checked for dechlorination:	Dyes DNo MN/A		
eadspace in VOA Vials (>6mm):	CIYes CINO SHNA		
rip Blank Present:			
rlp Blank Custody Seals Present	⊡Yes ⊡No Å ¶N/A		
ace Trip Blank Lot # (if purchased):		<u> </u>	
lient Notification/ Resolution:			Field Data Required? Y / N
Person Contacted:	Date	Time:	
Comments/ Resolution:			
Project Manager Review:	(H)	· · · · · · · · · · · · · · · · · · ·	Date: 12/15/10
ote: Whenever there is a discrepancy affecting North C F-L213Rev.00, 05Aug2009	arolina compliance sa	mples, a copy of this form will 1700 Elm St	be sent to the Rend Acalydical SEMDER , Inc. reet SE, Suite 200, Minneap Page 14

Page Page



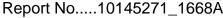
> Tel: 612-607-1700 Fax: 612-607-6444

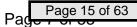
Reporting Flags

- A = Reporting Limit based on signal to noise
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- Interference present | =
- J = Estimated value
- Nn = Value obtained from additional analysis
- P = PCDE Interference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %D Exceeds limits
- Y = Calculated using average of daily RFs
- See Discussion =

REPORT OF LABORATORY ANALYSIS

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Appendix B

Sample Analysis Summary





> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PTL0344-0 101452710 P101222B_ BAL 995 mL NA NA P101222B(P101222B_ BLANK-273	01 _04 02 _01		Matrix Dilution Collected Received Extracted Analyzed	Water 3 12/07/2010 18:5 12/14/2010 10:5 12/21/2010 14:0 12/22/2010 23:4	0 0	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-4,4'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6,6'-TeCB 13C-3,4,4'-TrCB 13C-2,2',4,6,6'-PeCB 13C-3,3',4,4'-TeCB 13C-2,2',3,3',4,4'-TeCB 13C-2,2',3,3',4,4'-TECB 13C-2,	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	7.179 10.222 10.582 18.358 14.775 26.519 18.688 33.730 34.317 25.127 37.889 37.235 36.715 36.379 41.041 31.315 44.060 42.919 47.312 37.235 49.847 42.651 52.455 54.351 49.351 56.334	$\begin{array}{c} 1.61\\ 2.69\\ 1.81\\ 1.64\\ 1.17\\ 1.08\\ 0.83\\ 0.82\\ 0.83\\ 1.62\\ 1.62\\ 1.62\\ 1.62\\ 1.62\\ 1.60\\ 1.60\\ 1.29\\ 1.28\\ 1.27\\ 1.26\\ 1.05\\ 1.06\\ 0.90\\ 0.90\\ 0.78\\ 0.79\\ 0.72\end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 0.00329\\ 0.0271\\ 0.0188\\ 0.528\\ 0.151\\ 1.50\\ 0.449\\ 1.69\\ 1.76\\ 0.992\\ 1.80\\ 1.78\\ 1.77\\ 1.74\\ 1.82\\ 1.33\\ 3.52\\ 1.79\\ 1.75\\ 1.57\\ 1.85\\ 1.68\\ 1.75\\ 1.57\\ 1.60\\ 1.35\end{array}$	0 1 26 8 75 22 84 88 50 90 89 89 87 91 67 88 90 88 78 93 84 88 78 80 68	IRRR R R
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	21.992 34.384 40.337	1.07 1.63 1.04	2.0 2.0 2.0	1.25 1.57 1.59	63 79 80	
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	13.313 24.104 31.567 39.867 51.980	1.60 0.80 1.60 1.28 0.95	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA	

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

 $Nn = Value \ obtained \ from \ additional \ analyses$

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

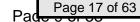
X = Outside QC Limits

RT = Retention Time

I = Interference ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-01	
10145271001	
P101222B_04	

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
1				ND		1.22
2				ND		0.478
3				ND		0.262
4				ND		4.12
4 5				ND		0.251
6				ND		0.251
7				ND		0.251
8				ND		0.251
9				ND		0.251
10				ND		0.251
11				ND		1.51
12	12/13			ND		0.503
13	12/13			ND		0.503
14				ND		0.251
15				ND		0.251
16				ND		0.251
17				ND		0.251
18	18/30			ND		0.503
19				ND		0.251
20	20/28			ND		0.503
21	21/33			ND		0.503
22				ND		0.251
23				ND		0.251
24				ND		0.251
25				ND		0.251
26	26/29			ND		0.503
27				ND		0.251
28	20/28			ND		0.503
29	26/29			ND		0.503
30	18/30			ND		0.503
31		21.673	1.02	0.278		0.251
32				ND		0.251
33	21/33			ND		0.503
34				ND		0.251
35				ND		0.251
36				ND		0.251
37				ND		0.251
38				ND		0.251
39				ND		0.251
40	40/41/71			ND		1.51
41	40/41/71			ND		1.51
42				ND		0.503
43	43/73			ND		1.01
44	44/47/65			ND		1.51
45	45/51			ND		1.01
46	10,01			ND		0.503
47	44/47/65			ND		1.51
48	1,, 17,00			ND		0.503
.0						0.000

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

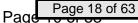
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I = Interference ng's = Nanograms

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-01
10145271001
P101222B_04

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		1.01
50	50/53			ND		1.01
51	45/51			ND		1.01
52				ND		0.503
53	50/53			ND		1.01
54				ND		0.503
55				ND		0.503
56				ND		0.503
57				ND		0.503
58				ND		0.503
59	59/62/75			ND		1.51
60				ND		0.503
61	61/70/74/76			ND		2.01
62	59/62/75			ND		1.51
63				ND		0.503
64				ND		0.503
65	44/47/65			ND		1.51
66				ND		0.503
67				ND		0.503
68				ND		0.503
69	49/69			ND		1.01
70	61/70/74/76			ND		2.01
71	40/41/71			ND		1.51
72				ND		0.503
73	43/73			ND		1.01
74	61/70/74/76			ND		2.01
75	59/62/75			ND		1.51
76	61/70/74/76			ND		2.01
77				ND		0.503
78				ND		0.503
79				ND		0.503
80				ND		0.503
81				ND		0.503
82				ND		0.503
83				ND		0.503
84				ND		0.503
85	85/116/117			ND		1.51
86	86/87/97/108/119/125			ND		3.02
87	86/87/97/108/119/125			ND		3.02
88	88/91			ND		1.01
89				ND		0.503
90	90/101/113			ND		1.51
91	88/91			ND		1.01
92				ND		0.503
93	93/98/100/102			ND		2.01
94	-			ND		0.503
95				ND		0.503
96				ND		0.503

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

B = Less than To times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

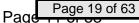
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ng's = Nanograms

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

PTL0344-01
10145271001
P101222B_04

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		3.02
98	93/98/100/102			ND		2.01
99				ND		0.503
100	93/98/100/102			ND		2.01
101	90/101/113			ND		1.51
102	93/98/100/102			ND		2.01
103				ND		0.503
104				ND		0.503
105				ND		0.503
106				ND		0.503
107	107/124			ND		1.01
108	86/87/97/108/119/125			ND		3.02
109				ND		0.503
110	110/115			ND		1.01
111				ND		0.503
112				ND		0.503
113	90/101/113			ND		1.51
114				ND		0.503
115	110/115			ND		1.01
116	85/116/117			ND		1.51
117	85/116/117			ND		1.51
118				ND		0.503
119	86/87/97/108/119/125			ND		3.02
120				ND		0.503
121				ND		0.503
122				ND		0.503
123				ND		0.503
124	107/124			ND		1.01
125	86/87/97/108/119/125			ND		3.02
126				ND		0.503
127				ND		0.503
128	128/166			ND		1.01
129	129/138/163			ND		1.51
130				ND		0.503
131				ND		0.503
132				ND		0.503
133				ND		0.503
134	134/143			ND		1.01
135	135/151			ND		1.01
136				ND		0.503
137				ND		0.503
138	129/138/163			ND		1.51
139	139/140			ND		1.01
140	139/140			ND		1.01
141				ND		0.503
142				ND		0.503
143	134/143			ND		1.01
144				ND		0.503

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

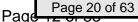
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ng's = Nanograms

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.503
146				ND		0.503
147	147/149			ND		1.01
148				ND		0.503
149	147/149			ND		1.01
150				ND		0.503
151	135/151			ND		1.01
152				ND		0.503
153	153/168			ND		1.01
154				ND		0.503
155				ND		0.503
156	156/157			ND		1.01
157	156/157			ND		1.01
158				ND		0.503
159				ND		0.503
160				ND		0.503
161				ND		0.503
162				ND		0.503
163	129/138/163			ND		1.51
164				ND		0.503
165				ND		0.503
166	128/166			ND		1.01
167				ND		0.503
168	153/168			ND		1.01
169				ND		0.503
170				ND		0.503
171	171/173			ND		1.01
172				ND		0.503
173	171/173			ND		1.01
174				ND		0.503
175				ND		0.503
176				ND		0.503
177				ND		0.503
178 179				ND		0.503 0.503
179	180/193			ND ND		1.01
180	160/193					0.503
182				ND ND		0.503
182	183/185			ND		1.01
184	103/103			ND		0.503
185	183/185			ND		1.01
186	100/100			ND		0.503
187				ND		0.503
188				ND		0.503
189				ND		0.503
190				ND		0.503
191				ND		0.503
192				ND		0.503
102						0.000

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time

I = Interference

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Report No.....10145271_1668A

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Method 1668A Polychlorobiphenyl **Sample Analysis Results**

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-01
10145271001
P101222B_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		1.01
194				ND		0.754
195				ND		0.754
196				ND		0.754
197	197/200			ND		1.51
198	198/199			ND		1.51
199	198/199			ND		1.51
200	197/200			ND		1.51
201				ND		0.754
202				ND		0.754
203				ND		0.754
204				ND		0.754
205				ND		0.754
206				ND		0.754
207				ND		0.754
208				ND		0.754
209				ND		0.754

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Report No.....10145271_1668A

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	PTL034
Lab Sample ID	101452
Filename	P10122

44-01 271001 22B_04

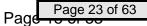
Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	ND	
Total Trichloro Biphenyls	0.278	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
Decachloro Biphenyls	ND	
Total PCBs	0.278	

ND = Not Detected

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PTL0344-0 101452710 P101222B BAL 1040 mL NA NA P101222B(P101222B BLANK-27	02 _05 02 _01		Matrix Dilution Collected Received Extracted Analyzed	Water 3 12/07/2010 19:0 12/14/2010 10:5 12/21/2010 14:0 12/23/2010 00:4	0 0	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	/
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-4,4'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6-TeCB 13C-3,4,4',5-TeCB 13C-3,3',4,4'-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,3',4,4',5,5'-HpCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	7.191 10.222 10.546 18.345 14.787 26.502 18.671 33.712 34.299 25.127 37.871 37.234 36.697 36.362 41.023 31.314 44.042 42.901 47.312 37.217 49.846 42.633 52.432 54.329 49.329 56.312	$\begin{array}{c} 0.23\\ 0.76\\ 1.80\\ 1.70\\ 1.28\\ 1.07\\ 0.79\\ 0.80\\ 0.82\\ 1.55\\ 1.61\\ 1.58\\ 1.55\\ 1.61\\ 1.55\\ 1.61\\ 1.55\\ 1.31\\ 1.25\\ 1.29\\ 1.28\\ 1.05\\ 1.04\\ 0.91\\ 0.88\\ 0.79\\ 0.79\\ 0.72\end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 0.00297\\ 0.0128\\ 0.00994\\ 0.319\\ 0.0631\\ 1.30\\ 0.232\\ 1.62\\ 1.66\\ 0.832\\ 1.80\\ 1.75\\ 1.73\\ 1.74\\ 1.80\\ 1.27\\ 3.54\\ 1.79\\ 1.75\\ 1.53\\ 1.87\\ 1.71\\ 1.72\\ 1.56\\ 1.60\\ 1.32\end{array}$	1 1 0 16 4 65 12 81 83 42 90 88 87 87 90 64 89 90 64 89 90 88 77 93 85 86 78 80 66	IRIRRRI R
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	21.991 34.366 40.319	1.09 1.62 1.03	2.0 2.0 2.0	0.921 1.50 1.60	46 75 80	
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	13.301 24.104 31.566 39.850 51.958	1.60 0.80 1.57 1.29 0.89	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA	

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

RT = Retention Time

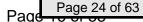
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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

PTL0344-02	
10145271002	
P101222B_05	

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
1				ND		0.688
2				ND		0.435
3				ND		0.443
4				ND		5.57
5				ND		0.241
6				ND		0.241
7				ND		0.241
8				ND		0.241
9				ND		0.241
10				ND		0.296
11				ND		1.45
12	12/13			ND		0.482
13	12/13			ND		0.482
14	12,10			ND		0.241
15				ND		0.241
16				ND		0.241
17				ND		0.241
18	18/30			ND		0.482
19	10/00			ND		0.241
20	20/28			ND		0.482
21	21/33			ND		0.482
22	21/33			ND		0.241
22				ND		0.241
23 24				ND		0.241
24 25				ND		0.241
	26/29			ND		0.482
26 27	20/29			ND		
	20/28			ND		0.241 0.482
28						0.462
29	26/29			ND		0.482
30	18/30			ND		0.482
31				ND		0.241
32	01/00			ND		0.241
33	21/33			ND		0.482
34				ND		0.241
35				ND		0.241
36				ND		0.241
37				ND		0.241
38				ND		0.241
39				ND		0.241
40	40/41/71			ND		1.45
41	40/41/71			ND		1.45
42				ND		0.482
43	43/73			ND		0.965
44	44/47/65			ND		1.45
45	45/51			ND		0.965
46				ND		0.482
47	44/47/65			ND		1.45
48				ND		0.482

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-02
10145271002
P101222B_05

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0.965
50	50/53			ND		0.965
51	45/51			ND		0.965
52				ND		0.482
53	50/53			ND		0.965
54				ND		0.482
55				ND		0.482
56				ND		0.482
57				ND		0.482
58				ND		0.482
59	59/62/75			ND		1.45
60	00,01,0			ND		0.482
61	61/70/74/76			ND		1.93
62	59/62/75			ND		1.45
63	00,02,10			ND		0.482
64				ND		0.482
65	44/47/65			ND		1.45
66	11/11/00			ND		0.482
67				ND		0.482
68				ND		0.482
69	49/69			ND		0.965
70	61/70/74/76			ND		1.93
71	40/41/71			ND		1.45
72	40/41/11			ND		0.482
73	43/73			ND		0.965
74	61/70/74/76			ND		1.93
75	59/62/75			ND		1.45
76	61/70/74/76			ND		1.93
70	01/10/14/10			ND		0.482
78				ND		0.482
78 79						0.482
80				ND ND		
						0.482
81 82				ND ND		0.482 0.482
83				ND		0.482
84	05/440/447			ND		0.482
85	85/116/117			ND		1.45
86	86/87/97/108/119/125			ND		2.89
87	86/87/97/108/119/125			ND		2.89
88	88/91			ND		0.965
89	00/404/442			ND		0.482
90	90/101/113			ND		1.45
91	88/91			ND		0.965
92	00/00/400/400			ND		0.482
93	93/98/100/102			ND		1.93
94				ND		0.482
95				ND		0.482
96				ND		0.482

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

N = Value obtained from additional analyses

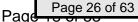
ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time

I = Interference ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

PTL0344-02
10145271002
P101222B_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125			ND		2.89
97	93/98/100/102			ND		1.93
99	93/98/100/102			ND		0.482
100	93/98/100/102			ND		1.93
100	90/101/113			ND		1.45
102	93/98/100/102			ND		1.93
102	33/30/100/102			ND		0.482
104				ND		0.482
105				ND		0.482
106				ND		0.482
107	107/124			ND		0.965
108	86/87/97/108/119/125			ND		2.89
109	00/01/01/100/110/120			ND		0.482
110	110/115			ND		0.965
111	110,110			ND		0.482
112				ND		0.482
113	90/101/113			ND		1.45
114				ND		0.482
115	110/115			ND		0.965
116	85/116/117			ND		1.45
117	85/116/117			ND		1.45
118				ND		0.482
119	86/87/97/108/119/125			ND		2.89
120				ND		0.482
121				ND		0.482
122				ND		0.482
123				ND		0.482
124	107/124			ND		0.965
125	86/87/97/108/119/125			ND		2.89
126				ND		0.482
127				ND		0.482
128	128/166			ND		0.965
129	129/138/163			ND		1.45
130				ND		0.482
131				ND		0.482
132				ND		0.482
133				ND		0.482
134	134/143			ND		0.965
135	135/151			ND		0.965
136				ND		0.482
137				ND		0.482
138	129/138/163			ND		1.45
139	139/140			ND		0.965
140	139/140			ND		0.965
141				ND		0.482
142	101/110			ND		0.482
143	134/143			ND		0.965
144				ND		0.482

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

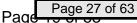
ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference

ng's = Nanograms

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-02	
10145271002	
P101222B_05	

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.482
146				ND		0.482
147	147/149			ND		0.965
148				ND		0.482
149	147/149			ND		0.965
150				ND		0.482
151	135/151			ND		0.965
152				ND		0.482
153	153/168			ND		0.965
154				ND		0.482
155				ND		0.482
156	156/157			ND		0.965
157	156/157			ND		0.965
158				ND		0.482
159				ND		0.482
160				ND		0.482
161				ND		0.482
162				ND		0.482
163	129/138/163			ND		1.45
164				ND		0.482
165				ND		0.482
166	128/166			ND		0.965
167				ND		0.482
168	153/168			ND		0.965
169				ND		0.482
170				ND		0.482
171	171/173			ND		0.965
172				ND		0.482
173	171/173			ND		0.965
174				ND		0.482
175				ND		0.482
176				ND		0.482
177				ND		0.482
178				ND		0.482
179				ND		0.482
180	180/193			ND		0.965
181				ND		0.482
182				ND		0.482
183	183/185			ND		0.965
184				ND		0.482
185	183/185			ND		0.965
186				ND		0.482
187				ND		0.482
188				ND		0.482
189				ND		0.482
190				ND		0.482
191				ND		0.482
192				ND		0.482

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time

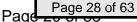
I = Interference

ng's = Nanograms

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

PTL0344-02
10145271002
P101222B_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
					J	
193	180/193			ND		0.965
194				ND		0.724
195				ND		0.724
196				ND		0.724
197	197/200			ND		1.45
198	198/199			ND		1.45
199	198/199			ND		1.45
200	197/200			ND		1.45
201				ND		0.724
202				ND		0.724
203				ND		0.724
204				ND		0.724
205				ND		0.724
206				ND		0.724
207				ND		0.724
208				ND		0.724
209				ND		0.724

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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Report No.....10145271_1668A

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	PTL
Lab Sample ID	101
Filename	P10

.0344-02 45271002)1222B_05

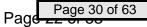
Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
Decachloro Biphenyls	ND
Total PCBs	ND

ND = Not Detected

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> Tel: 612-607-1700 Fax: 612-607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PTL0344-0 101452710 P101222B BAL 959 mL NA NA P101222B(P101222B BLANK-27	03 _06 02 _01		Matrix Dilution Collected Received Extracted Analyzed	Water 3 12/07/2010 18:1 12/14/2010 10:5 12/21/2010 14:0 12/23/2010 01:4	0 0	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	·
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-2,2'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6-TeCB 13C-3,3',4,4'-TeCB 13C-3,3',4,4'-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',6,6'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,3',4,4',5,5',6,6'-OCCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	7.191 10.234 10.570 18.357 14.787 26.519 18.688 33.729 34.316 25.144 37.905 37.251 36.714 36.379 41.041 31.332 44.059 42.919 47.329 37.234 49.868 42.651 52.476 54.352 49.351 56.335	$\begin{array}{c} 0.38\\ 3.55\\ 1.64\\ 1.63\\ 1.13\\ 1.11\\ 0.84\\ 0.80\\ 1.63\\ 1.58\\ 1.63\\ 1.57\\ 1.59\\ 1.29\\ 1.27\\ 1.29\\ 1.27\\ 1.29\\ 1.27\\ 1.02\\ 1.06\\ 0.91\\ 0.90\\ 0.78\\ 0.70\end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 0.00653\\ 0.0569\\ 0.0433\\ 0.697\\ 0.256\\ 1.74\\ 0.626\\ 1.82\\ 1.85\\ 1.85\\ 1.85\\ 1.85\\ 1.83\\ 1.85\\ 1.83\\ 1.85\\ 1.83\\ 1.85\\ 1.86\\ 1.43\\ 3.50\\ 1.82\\ 1.71\\ 1.75\\ 1.88\\ 1.85\\ 1.76\\ 1.73\\ 1.73\\ 1.73\\ 1.45\end{array}$	1 32 355 13 87 31 91 93 56 92 93 91 93 93 72 88 91 85 88 94 92 88 87 73	IR R R
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	22.008 34.400 40.337	1.07 1.60 1.05	2.0 2.0 2.0	1.38 1.61 1.62	69 81 81	
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	13.313 24.121 31.566 39.867 51.981	1.59 0.80 1.58 1.27 0.91	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA	

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

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R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected

NA = Not Applicable

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

PTL0344-03	
10145271003	
P101222B_06	

$\begin{array}{c c c c c c c c c c c c c c c c c c c $					Concentration	EMPC	EML
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	IUPAC	Co-elutions	RT	Ratio			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1				ND		0.535
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2				ND		0.261
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	4						1.67
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	5						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	6						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	7						0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	8				ND		0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	12	12/13					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	13	12/13			ND		0.521
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.261
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	15						0.261
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$							0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$					ND		0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		18/30					0.521
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	20	20/28			ND		0.521
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.521
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	22				ND		0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		26/29			ND		0.521
$\begin{array}{cccccccccccccccccccccccccccccccccccc$					ND		0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		20/28					0.521
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		26/29					0.521
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		18/30			ND		0.521
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	31		21.690	1.01	0.376		0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	32				ND		0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	33	21/33			ND		0.521
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	34				ND		0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	35				ND		0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.261
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							0.261
40 40/41/71 ND 1.56 41 40/41/71 ND 1.56 42 ND 0.521 43 43/73 ND 1.04 44 44/47/65 ND 1.04 45 45/51 ND 1.04 46 ND 0.521 47 44/47/65 ND 0.521	38						0.261
41 40/41/71 ND 1.56 42 ND 0.521 43 43/73 ND 1.04 44 44/47/65 ND 1.56 45 45/51 ND 1.04 46 ND 0.521 47 44/47/65 ND 1.56	39				ND		0.261
42 ND 0.521 43 43/73 ND 1.04 44 44/47/65 ND 1.56 45 45/51 ND 1.04 46 ND 0.521 47 44/47/65 ND 1.56	40	40/41/71			ND		1.56
43 43/73 ND 1.04 44 44/47/65 ND 1.56 45 45/51 ND 1.04 46 ND 0.521 47 44/47/65 ND 1.56							1.56
43 43/73 ND 1.04 44 44/47/65 ND 1.56 45 45/51 ND 1.04 46 ND 0.521 47 44/47/65 ND 1.56							0.521
44 44/47/65 ND 1.56 45 45/51 ND 1.04 46 ND 0.521 47 44/47/65 ND 1.56							1.04
45 45/51 ND 1.04 46 ND 0.521 47 44/47/65 ND 1.56					ND		
46 ND 0.521 47 44/47/65 ND 1.56	45	45/51			ND		
47 44/47/65 ND 1.56							
48 ND 0.521		44/47/65					1.56
	48				ND		0.521

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

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Report No.....10145271_1668A

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

PTL0344-03
10145271003
P101222B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69			ND		1.04
50	50/53			ND		1.04
51	45/51			ND		1.04
52	45/51			ND		0.521
53	50/53			ND		1.04
54	56/55			ND		0.521
55				ND		0.521
56				ND		0.521
57				ND		0.521
58				ND		0.521
59	59/62/75			ND		1.56
60	00,02,10			ND		0.521
61	61/70/74/76			ND		2.09
62	59/62/75			ND		1.56
63	00,02,10			ND		0.521
64				ND		0.521
65	44/47/65			ND		1.56
66				ND		0.521
67				ND		0.521
68				ND		0.521
69	49/69			ND		1.04
70	61/70/74/76			ND		2.09
71	40/41/71			ND		1.56
72				ND		0.521
73	43/73			ND		1.04
74	61/70/74/76			ND		2.09
75	59/62/75			ND		1.56
76	61/70/74/76			ND		2.09
77				ND		0.521
78				ND		0.521
79				ND		0.521
80				ND		0.521
81				ND		0.521
82				ND		0.521
83				ND		0.521
84				ND		0.521
85	85/116/117			ND		1.56
86	86/87/97/108/119/125			ND		3.13
87	86/87/97/108/119/125			ND		3.13
88	88/91			ND		1.04
89				ND		0.521
90	90/101/113			ND		1.56
91	88/91			ND		1.04
92				ND		0.521
93	93/98/100/102			ND		2.09
94				ND		0.521
95				ND		0.521
96				ND		0.521

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

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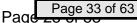
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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

PTL0344-03
10145271003
P101222B_06

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		3.13
98	93/98/100/102			ND		2.09
99	00,00,100,102			ND		0.521
100	93/98/100/102			ND		2.09
101	90/101/113			ND		1.56
102	93/98/100/102			ND		2.09
103				ND		0.521
104				ND		0.521
105				ND		0.521
106				ND		0.521
107	107/124			ND		1.04
108	86/87/97/108/119/125			ND		3.13
109	00,01,01,100,110,120			ND		0.521
110	110/115			ND		1.04
111	110,110			ND		0.521
112				ND		0.521
113	90/101/113			ND		1.56
114				ND		0.521
115	110/115			ND		1.04
116	85/116/117			ND		1.56
117	85/116/117			ND		1.56
118	86,116,111			ND		0.521
119	86/87/97/108/119/125			ND		3.13
120	00/01/01/100/110/120			ND		0.521
121				ND		0.521
122				ND		0.521
123				ND		0.521
124	107/124			ND		1.04
125	86/87/97/108/119/125			ND		3.13
126	00,01,01,100,110,120			ND		0.521
127				ND		0.521
128	128/166			ND		1.04
129	129/138/163			ND		1.56
130	,			ND		0.521
131				ND		0.521
132				ND		0.521
133				ND		0.521
134	134/143			ND		1.04
135	135/151			ND		1.04
136				ND		0.521
137				ND		0.521
138	129/138/163			ND		1.56
139	139/140			ND		1.04
140	139/140			ND		1.04
141				ND		0.521
142				ND		0.521
143	134/143			ND		1.04
144				ND		0.521
						0.02.

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

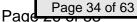
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ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-03	
10145271003	
P101222B_06	

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.521
145				ND		0.521
140	147/149			ND		1.04
148	147/149			ND		0.521
140	147/149			ND		1.04
150	147/145			ND		0.521
151	135/151			ND		1.04
152	188/181			ND		0.521
153	153/168			ND		1.04
154	188/188			ND		0.521
155				ND		0.521
156	156/157			ND		1.04
157	156/157			ND		1.04
158	136/137			ND		0.521
159				ND		0.521
160				ND		0.521
161				ND		0.521
162				ND		0.521
163	129/138/163			ND		1.56
164	123/130/103			ND		0.521
165				ND		0.521
166	128/166			ND		1.04
167	120/100			ND		0.521
168	153/168			ND		1.04
169	155/100			ND		0.521
170				ND		0.521
171	171/173			ND		1.04
172	171/175			ND		0.521
173	171/173			ND		1.04
174	171/175			ND		0.521
175				ND		0.521
176				ND		0.521
177				ND		0.521
178				ND		0.521
179				ND		0.521
180	180/193			ND		1.04
181	100/195			ND		0.521
182				ND		0.521
183	183/185			ND		1.04
184	100/100			ND		0.521
185	183/185			ND		1.04
186				ND		0.521
187				ND		0.521
188				ND		0.521
189				ND		0.521
190				ND		0.521
190				ND		0.521
192				ND		0.521
152						0.021

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

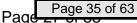
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I = Interference ng's = Nanograms

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-03
10145271003
P101222B 06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		1.04
194				ND		0.782
195				ND		0.782
196				ND		0.782
197	197/200			ND		1.56
198	198/199			ND		1.56
199	198/199			ND		1.56
200	197/200			ND		1.56
201				ND		0.782
202				ND		0.782
203				ND		0.782
204				ND		0.782
205				ND		0.782
206				ND		0.782
207				ND		0.782
208				ND		0.782
209				ND		0.782

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Report No.....10145271_1668A

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Method 1668A Polychlorobiphenyl Sample Analysis Results

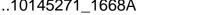
PTL0344-03
10145271003
P101222B_06

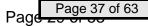
Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	ND	
Total Trichloro Biphenyls	0.376	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
Decachloro Biphenyls	ND	
Total PCBs	0.376	

ND = Not Detected

REPORT OF LABORATORY ANALYSIS

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PTL0344-0 101452710 P101222B BAL 1010 mL NA NA P101222B(P101222B BLANK-27	04 _07 02 _01		Matrix Dilution Collected Received Extracted Analyzed	Water 3 12/07/2010 18:2 12/14/2010 10:5 12/21/2010 14:0 12/23/2010 02:4	0 0	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	I ng's Found	% Recovery	/
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-4,4'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-3,4,4'-TrCB 13C-3,4,4'-TrCB 13C-3,3',4,4'-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4'-5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',6,6'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,3',4,4',5,5',6,6'-OcCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13CDeCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	7.191 10.222 10.546 18.357 14.775 26.518 18.688 33.729 34.316 25.143 37.904 37.250 36.714 36.395 41.057 31.314 44.075 42.935 47.344 37.250 49.888 42.650 52.474 54.371 49.349 56.354	$\begin{array}{c} 0.28\\ 2.27\\ 1.63\\ 1.59\\ 1.05\\ 1.07\\ 0.82\\ 0.81\\ 0.80\\ 1.59\\ 1.62\\ 1.61\\ 1.60\\ 1.56\\ 1.54\\ 1.25\\ 1.26\\ 1.28\\ 1.28\\ 1.28\\ 1.06\\ 1.02\\ 0.89\\ 0.83\\ 0.83\\ 0.83\\ 0.70\end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 0.00510\\ 0.0529\\ 0.0385\\ 0.845\\ 0.250\\ 1.98\\ 0.711\\ 1.82\\ 1.91\\ 1.29\\ 1.73\\ 1.75\\ 1.76\\ 1.78\\ 1.67\\ 1.59\\ 3.16\\ 1.67\\ 1.46\\ 2.16\\ 1.83\\ 2.15\\ 1.77\\ 1.84\\ 1.87\\ 1.56\end{array}$	1 3 2 42 12 99 36 91 95 64 87 88 88 89 83 80 79 83 73 108 91 108 89 92 93 78	IRIRR R
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	21.991 34.383 40.336	1.13 1.61 1.07	2.0 2.0 2.0	1.65 1.68 1.70	83 84 85	
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	13.313 24.121 31.582 39.883 52.000	1.61 0.82 1.59 1.29 0.90	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA	

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

RT = Retention Time

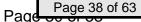
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ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-04	
10145271004	
P101222B_07	

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
	00-010110113		itatio		ing/L	
1				ND		0.837
2				ND		0.257
3				ND		0.249
4				ND		1.46
5				ND		0.249
6				ND		0.249
7				ND		0.249
8				ND		0.249
9				ND		0.249
10				ND		0.249
11	10/10			ND		1.49
12	12/13			ND		0.497
13	12/13			ND		0.497
14				ND		0.249
15		18.381	1.51	0.308		0.249
16				ND		0.249
17	4.0.10.0			ND		0.249
18	18/30			ND		0.497
19	00/00			ND		0.249
20	20/28	22.025	1.01	1.04		0.497
21	21/33			ND		0.497
22		22.729	1.02	0.368		0.249
23				ND		0.249
24				ND		0.249
25	00/00			ND		0.249
26	26/29			ND		0.497
27	00/00			ND		0.249
28	20/28	22.025	1.01	(1.04)		0.497
29	26/29			ND		0.497
30	18/30			ND		0.497
31		21.689	1.04	0.757		0.249
32	21/33			ND		0.249
33	21/33			ND		0.497
34 35				ND		0.249 0.249
35 36				ND ND		0.249
30		26.535	1.05	0.392		0.249
38		20.000	1.05	0.392 ND		0.249
30 39				ND		0.249
40	40/41/71			ND		1.49
40	40/41/71			ND		1.49
42	40/41/71			ND		0.497
43	43/73			ND		0.995
43	44/47/65			ND		1.49
44	45/51			ND		0.995
45				ND		0.497
40	44/47/65			ND		1.49
48				ND		0.497
-0						0.737

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

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R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

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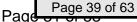
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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-04	
10145271004	
P101222B_07	

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0.995
50	50/53			ND		0.995
51	45/51			ND		0.995
52		24.137	0.79	1.25		0.497
53	50/53			ND		0.995
54				ND		0.497
55				ND		0.497
56				ND		0.497
57				ND		0.497
58				ND		0.497
59	59/62/75			ND		1.49
60				ND		0.497
61	61/70/74/76			ND		1.99
62	59/62/75			ND		1.49
63	00/02/10			ND		0.497
64		26.585	0.78	0.599		0.497
65	44/47/65	20.000		ND		1.49
66	++/+//00	29.738	0.76	0.987		0.497
67				ND		0.497
68				ND		0.497
69	49/69			ND		0.995
70	49/09 61/70/74/76			ND		1.99
70				ND		
	40/41/71					1.49
72 73	40/70			ND		0.497
	43/73			ND ND		0.995
74	61/70/74/76					1.99
75	59/62/75			ND		1.49
76	61/70/74/76			ND		1.99
77				ND		0.497
78				ND		0.497
79				ND		0.497
80				ND		0.497
81				ND		0.497
82				ND		0.497
83				ND		0.497
84				ND		0.497
85	85/116/117			ND		1.49
86	86/87/97/108/119/125			ND		2.98
87	86/87/97/108/119/125			ND		2.98
88	88/91			ND		0.995
89				ND		0.497
90	90/101/113			ND		1.49
91	88/91			ND		0.995
92				ND		0.497
93	93/98/100/102			ND		1.99
94				ND		0.497
95		28.447	1.57	1.17		0.497
95						

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

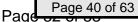
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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename PTL0344-04 10145271004 P101222B_07

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		2.98
98	93/98/100/102			ND		1.99
99		32.203	1.60	0.592		0.497
100	93/98/100/102			ND		1.99
101	90/101/113			ND		1.49
102	93/98/100/102			ND		1.99
103				ND		0.497
104				ND		0.497
105		37.921	1.60	0.706		0.497
106				ND		0.497
107	107/124			ND		0.995
108	86/87/97/108/119/125			ND		2.98
109	00,01,01,100,110,120			ND		0.497
110	110/115	33.628	1.58	2.10		0.995
111	110/110			ND		0.497
112				ND		0.497
113	90/101/113			ND		1.49
114	30/101/110			ND		0.497
115	110/115	33.628	1.58	(2.10)		0.995
116	85/116/117			ND		1.49
117	85/116/117			ND		1.49
118	03/110/117	36.747	1.51	1.43		0.497
119	86/87/97/108/119/125			ND		2.98
120	80/87/97/108/119/125			ND		0.497
120				ND		0.497
121				ND		0.497
122				ND		0.497
123	107/124			ND		0.497
124	86/87/97/108/119/125			ND		2.98
	00/07/97/100/119/125					0.497
126				ND		
127	400/400			ND		0.497
128	128/166			ND		0.995
129	129/138/163	39.916	1.24	2.17		1.49
130				ND		0.497
131				ND		0.497
132		36.814	1.27	0.704		0.497
133	10.1/1.10			ND		0.497
134	134/143			ND		0.995
135	135/151			ND		0.995
136				ND		0.497
137				ND		0.497
138	129/138/163	39.916	1.24	(2.17)		1.49
139	139/140			ND		0.995
140	139/140			ND		0.995
141				ND		0.497
142				ND		0.497
143	134/143			ND		0.995
144				ND		0.497

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time

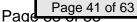
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Client Sample ID

Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612-607-6444

Method 1668A Polychlorobiphenyl **Sample Analysis Results**

PTL0344-04

Lab Sample ID		10145271004				
Filename		P101222B_07				
				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.497
146				ND		0.497
147	147/149	35.540	1.26	1.31		0.995
148				ND		0.497
149	147/149	35.540	1.26	(1.31)		0.995
150				ŇĎ		0.497
151	135/151			ND		0.995
152				ND		0.497
153	153/168	38.659	1.24	1.38		0.995
154				ND		0.497
155				ND		0.497
156	156/157			ND		0.995
157	156/157			ND		0.995
158				ND		0.497
159				ND		0.497
160				ND		0.497
161				ND		0.497
162	400/400/400			ND		0.497
163	129/138/163	39.916	1.24	(2.17)		1.49
164				ND		0.497
165	100/166			ND		0.497
166 167	128/166			ND ND		0.995 0.497
168	153/168	38.659	1.24	(1.38)		0.497
169	155/100		1.24	(1.38) ND		0.497
170				ND		0.497
171	171/173			ND		0.995
172	11 1/170			ND		0.497
173	171/173			ND		0.995
174				ND		0.497
175				ND		0.497
176				ND		0.497
177				ND		0.497
178				ND		0.497
179				ND		0.497
180	180/193			ND		0.995
181				ND		0.497
182				ND		0.497
183	183/185			ND		0.995
184				ND		0.497
185	183/185			ND		0.995
186				ND		0.497
187				ND		0.497
188				ND		0.497
189				ND		0.497
190				ND		0.497
191				ND		0.497 0.497
192				ND		0.497

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time

I = Interference

ng's = Nanograms

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Report No.....10145271_1668A

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Method 1668A Polychlorobiphenyl **Sample Analysis Results**

Client Sample ID Lab Sample ID Filename

PTL0344-04
10145271004
P101222B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.995
194				ND		0.746
195				ND		0.746
196				ND		0.746
197	197/200			ND		1.49
198	198/199			ND		1.49
199	198/199			ND		1.49
200	197/200			ND		1.49
201				ND		0.746
202				ND		0.746
203				ND		0.746
204				ND		0.746
205				ND		0.746
206				ND		0.746
207				ND		0.746
208				ND		0.746
209				ND		0.746

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	PTL0
Lab Sample ID	1014
Filename	P101

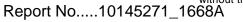
)344-04 5271004 222B_07

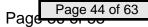
Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	0.308	
Total Trichloro Biphenyls	2.56	
Total Tetrachloro Biphenyls	2.84	
Total Pentachloro Biphenyls	6.00	
Total Hexachloro Biphenyls	5.56	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
Decachloro Biphenyls	ND	
Total PCBs	17.3	

ND = Not Detected

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	PTL0344-0 101452710 P101222B_ BAL 977 mL NA NA P101222B(P101222B_ BLANK-273	05 _08 02 _01		Matrix Dilution Collected Received Extracted Analyzed	Water 3 12/07/2010 18:3 12/14/2010 10:5 12/21/2010 14:0 12/23/2010 03:5	0 0	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	/
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-4,4'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6'-TeCB 13C-3,4,4'-TeCB 13C-3,3',4,4'-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,3',4,4',5,5',6,6'-OCCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	7.191 10.210 10.570 18.381 14.847 26.519 18.688 33.746 34.316 25.144 37.905 37.251 36.714 36.396 41.041 31.332 44.059 42.919 47.329 37.234 49.868 42.651 52.454 54.351 49.351 56.334	0.14 0.42 1.51 1.55 3.53 1.06 0.83 0.84 0.79 1.62 1.60 1.63 1.59 1.56 1.24 1.27 1.28 1.27 1.28 1.07 0.89 0.92 0.78 0.81 0.71	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 0.00337\\ 0.00780\\ 0.00405\\ 0.139\\ 0.0154\\ 1.06\\ 0.109\\ 1.59\\ 1.64\\ 0.645\\ 1.67\\ 1.70\\ 1.65\\ 1.67\\ 1.74\\ 1.21\\ 3.28\\ 1.69\\ 1.57\\ 1.78\\ 1.89\\ 1.57\\ 1.78\\ 1.89\\ 1.73\\ 1.73\\ 1.78\\ 1.51\end{array}$	1 0 7 2 53 5 79 82 32 83 85 83 84 87 60 82 84 79 89 89 95 86 88 975	RRRRR R
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	22.008 34.400 40.336	1.08 1.58 1.05	2.0 2.0 2.0	0.620 1.52 1.63	31 76 81	
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	13.325 24.121 31.583 39.884 51.980	1.61 0.80 1.63 1.28 0.90	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA	

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

RT = Retention Time

I = Interference

ng's = Nanograms

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

PTL0344-05	
10145271005	
P101222B_08	

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
1				ND		0.802
2				ND		0.412
3				ND		0.441
4				ND		13.1
5				ND		0.256
6				ND		0.256
7				ND		0.256
8				ND		0.301
9				ND		0.256
10				ND		0.847
11				ND		1.54
12	12/13			ND		0.512
13	12/13			ND		0.512
14				ND		0.256
15				ND		0.256
16				ND		0.256
17				ND		0.256
18	18/30			ND		0.512
19				ND		0.484
20	20/28			ND		0.512
21	21/33			ND		0.512
22	,			ND		0.256
23				ND		0.256
24				ND		0.256
25				ND		0.256
26	26/29			ND		0.512
27				ND		0.256
28	20/28			ND		0.512
29	26/29			ND		0.512
30	18/30			ND		0.512
31				ND		0.256
32				ND		0.256
33	21/33			ND		0.512
34	2.,00			ND		0.256
35				ND		0.256
36				ND		0.256
37				ND		0.256
38				ND		0.256
39				ND		0.256
40	40/41/71			ND		1.54
41	40/41/71			ND		1.54
42				ND		0.512
43	43/73			ND		1.02
44	44/47/65			ND		1.54
45	45/51			ND		1.02
46				ND		0.512
47	44/47/65			ND		1.54
48				ND		0.512
						0.0.12

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

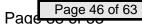
ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference

ng's = Nanograms

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-05	
10145271005	
P101222B_08	

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		1.02
50	50/53			ND		1.02
51	45/51			ND		1.02
52				ND		0.512
53	50/53			ND		1.02
54				ND		0.512
55				ND		0.512
56				ND		0.512
57				ND		0.512
58				ND		0.512
59	59/62/75			ND		1.54
60				ND		0.512
61	61/70/74/76			ND		2.05
62	59/62/75			ND		1.54
63				ND		0.512
64				ND		0.512
65	44/47/65			ND		1.54
66				ND		0.512
67				ND		0.512
68				ND		0.512
69	49/69			ND		1.02
70	61/70/74/76			ND		2.05
71	40/41/71			ND		1.54
72				ND		0.512
73	43/73			ND		1.02
74	61/70/74/76			ND		2.05
75	59/62/75			ND		1.54
76	61/70/74/76			ND		2.05
77				ND		0.512
78				ND		0.512
79				ND		0.512
80				ND		0.512
81				ND		0.512
82				ND		0.512
83				ND		0.512
84				ND		0.512
85	85/116/117			ND		1.54
86	86/87/97/108/119/125			ND		3.07
87	86/87/97/108/119/125			ND		3.07
88	88/91			ND		1.02
89				ND		0.512
90	90/101/113			ND		1.54
91	88/91			ND		1.02
92				ND		0.512
93	93/98/100/102			ND		2.05
94				ND		0.512
95				ND		0.512
96				ND		0.512

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

B = Less than to times higher than method blank level

$$\label{eq:R} \begin{split} R = Recovery \mbox{ outside of Method 1668A control limits} \\ Nn = Value \mbox{ obtained from additional analyses} \end{split}$$

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time

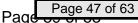
I = Interference

ng's = Nanograms

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Method 1668A Polychlorobiphenyl **Sample Analysis Results**

Client Sample ID Lab Sample ID Filename

PTL0344-05
10145271005
P101222B_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		3.07
98	93/98/100/102			ND		2.05
99				ND		0.512
100	93/98/100/102			ND		2.05
101	90/101/113			ND		1.54
102	93/98/100/102			ND		2.05
103				ND		0.512
104				ND		0.512
105				ND		0.512
106				ND		0.512
107	107/124			ND		1.02
108	86/87/97/108/119/125			ND		3.07
109				ND		0.512
110	110/115			ND		1.02
111				ND		0.512
112				ND		0.512
113	90/101/113			ND		1.54
114				ND		0.512
115	110/115			ND		1.02
116	85/116/117			ND		1.54
117	85/116/117			ND		1.54
118				ND		0.512
119	86/87/97/108/119/125			ND		3.07
120				ND		0.512
121				ND		0.512
122				ND		0.512
123				ND		0.512
124	107/124			ND		1.02
125	86/87/97/108/119/125			ND		3.07
126				ND		0.512
127				ND		0.512
128	128/166			ND		1.02
129	129/138/163			ND		1.54
130				ND		0.512
131				ND		0.512
132				ND		0.512
133				ND		0.512
134	134/143			ND		1.02
135	135/151			ND		1.02
136				ND		0.512
137				ND		0.512
138	129/138/163			ND		1.54
139	139/140			ND		1.02
140	139/140			ND		1.02
141				ND		0.512
142				ND		0.512
143	134/143			ND		1.02
144				ND		0.512

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

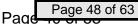
ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference

ng's = Nanograms

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-05	
10145271005	
P101222B_08	

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
4.45						
145				ND		0.512
146	4 47/4 40			ND		0.512
147	147/149			ND		1.02
148	4 47/4 40			ND		0.512
149	147/149			ND		1.02
150	105/151			ND		0.512
151	135/151			ND		1.02
152	150/100			ND		0.512
153	153/168			ND		1.02
154				ND		0.512
155	450/457			ND		0.512
156	156/157			ND		1.02
157	156/157			ND		1.02
158				ND		0.512
159				ND		0.512
160				ND		0.512
161				ND		0.512
162				ND		0.512
163	129/138/163			ND		1.54
164				ND		0.512
165				ND		0.512
166	128/166			ND		1.02
167				ND		0.512
168	153/168			ND		1.02
169				ND		0.512
170				ND		0.512
171	171/173			ND		1.02
172				ND		0.512
173	171/173			ND		1.02
174				ND		0.512
175				ND		0.512
176				ND		0.512
177				ND		0.512
178				ND		0.512
179				ND		0.512
180	180/193			ND		1.02
181				ND		0.512
182				ND		0.512
183	183/185			ND		1.02
184				ND		0.512
185	183/185			ND		1.02
186				ND		0.512
187				ND		0.512
188				ND		0.512
189				ND		0.512
190				ND		0.512
191				ND		0.512
192				ND		0.512

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time

I = Interference ng's = Nanograms

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Report No.....10145271_1668A

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

PTL0344-05
10145271005
P101222B 08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		1.02
194				ND		0.768
195				ND		0.768
196				ND		0.768
197	197/200			ND		1.54
198	198/199			ND		1.54
199	198/199			ND		1.54
200	197/200			ND		1.54
201				ND		0.768
202				ND		0.768
203				ND		0.768
204				ND		0.768
205				ND		0.768
206				ND		0.768
207				ND		0.768
208				ND		0.768
209				ND		0.768

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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Report No.....10145271_1668A

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	PTLC
Lab Sample ID	1014
Filename	P101

)344-05 5271005 222B_08

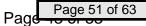
Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	ND	
Total Trichloro Biphenyls	ND	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
Decachloro Biphenyls	ND	
Total PCBs	ND	

ND = Not Detected

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> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename Injected By Total Amount Extracted ICAL ID CCal Filename(s)	BLANK-27 P101222A BAL 990 mL P101222A P101222A	_09 02		Matrix Extracted Analyzed Dilution	Water 12/21/2010 14:00 12/22/2010 16:26 NA		
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found % R	ecovery	
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-2,2'-DiCB 13C-2,2',6-TrCB 13C-2,2',6,6'-TeCB 13C-2,2',6,6'-TeCB 13C-3,4,4',5-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,2',4,4',6,6'-HxCB 13C-2,2',4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,2',3,3',5,5',6,6'-OcCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB		7.227 10.246 10.582 18.357 14.787 26.518 18.687 33.730 34.300 25.143 37.890 37.236 36.716 36.380 41.026 31.315 44.045 42.921 47.315 37.219 49.850 42.636 52.458 54.355 49.332 56.317	$\begin{array}{c} 2.76\\ 3.57\\ 1.64\\ 1.60\\ 1.05\\ 1.04\\ 0.82\\ 0.80\\ 0.80\\ 1.58\\ 1.59\\ 1.59\\ 1.59\\ 1.59\\ 1.59\\ 1.61\\ 1.59\\ 1.26\\ 1.28\\ 1.27\\ 1.26\\ 1.28\\ 1.27\\ 1.26\\ 1.28\\ 0.91\\ 0.81\\ 0.81\\ 0.81\\ 0.71\end{array}$	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	$\begin{array}{c} 0.0190\\ 0.109\\ 0.0830\\ 0.530\\ 0.261\\ 1.25\\ 0.492\\ 1.49\\ 1.55\\ 0.820\\ 1.66\\ 1.64\\ 1.65\\ 1.64\\ 1.73\\ 1.18\\ 3.41\\ 1.77\\ 1.71\\ 1.59\\ 1.88\\ 1.75\\ 1.79\\ 1.66\\ 1.68\\ 1.41\\ \end{array}$	1 5 4 27 3 6 25 4 77 4 8 3 2 3 2 6 9 5 8 8 6 9 4 7 9 8 3 4 0 8 3 4 7 0 8 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	RRR R R
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	21.991 34.384 40.321	1.08 1.58 1.06	2.0 2.0 2.0	1.13 1.51 1.54	56 76 77	
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	13.325 24.104 31.566 39.869 51.984	1.59 0.80 1.63 1.29 0.90	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA	

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated * = See Discussion X = Outside QC Limits RT = Retention Time

I = Interference

ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-27370 P101222A_09

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
1				ND		0.253
2				ND		0.253
2 3 4				ND		0.253
4				ND A		0.289
5				ND		0.253
5 6				ND		0.253
7				ND		0.253
8				ND		0.253
9				ND		0.253
10				ND		0.253
11				ND		1.52
12	12/13			ND		0.505
13	12/13			ND		0.505
14				ND		0.253
15				ND		0.253
16				ND		0.253
17				ND		0.253
18	18/30			ND		0.505
19				ND		0.253
20	20/28			ND		0.505
21	21/33			ND		0.505
22	21/00			ND		0.253
23				ND		0.253
24				ND		0.253
25				ND		0.253
26	26/29			ND		0.505
27	20/20			ND		0.253
28	20/28			ND		0.505
29	26/29			ND		0.505
30	18/30			ND		0.505
31	10/00			ND		0.253
32				ND		0.253
33	21/33			ND		0.505
34	21/00			ND		0.253
35				ND		0.253
36				ND		0.253
37				ND		0.253
38				ND		0.253
39				ND		0.253
40	40/41/71			ND		1.52
40	40/41/71			ND		1.52
41	TU/H I// I			ND		0.505
42 43	43/73			ND		1.01
43 44	43/73 44/47/65			ND		1.52
44 45	45/51			ND		1.01
40	+0/01			שאו		1.01

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

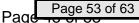
RT = Retention Time

I = Interference

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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-27370 P101222A_09

	.			Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
46				ND		0.505
47	44/47/65			ND		1.52
48				ND		0.505
49	49/69			ND		1.01
50	50/53			ND		1.01
51	45/51			ND		1.01
52				ND		0.505
53	50/53			ND		1.01
54				ND		0.505
55				ND		0.505
56				ND		0.505
57				ND		0.505
58				ND		0.505
59	59/62/75			ND		1.52
60				ND		0.505
61	61/70/74/76			ND		2.02
62	59/62/75			ND		1.52
63				ND		0.505
64				ND		0.505
65	44/47/65			ND		1.52
66				ND		0.505
67				ND		0.505
68				ND		0.505
69	49/69			ND		1.01
70	61/70/74/76			ND		2.02
71	40/41/71			ND		1.52
72				ND		0.505
73	43/73			ND		1.01
74	61/70/74/76			ND		2.02
75	59/62/75			ND		1.52
76	61/70/74/76			ND		2.02
77				ND		0.505
78				ND		0.505
79				ND		0.505
80				ND		0.505
81				ND		0.505
82				ND		0.505
83				ND		0.505
84				ND		0.505
85	85/116/117			ND		1.52
86	86/87/97/108/119/125			ND		3.03
87	86/87/97/108/119/125			ND		3.03
88	88/91			ND		1.01
89				ND		0.505
90	90/101/113			ND		1.52

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

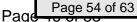
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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-27370 P101222A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
91	88/91			ND		1.01
92	00/91			ND		0.505
93	93/98/100/102			ND		2.02
93 94	93/90/100/102			ND		0.505
94 95				ND		0.505
96				ND		0.505
97	86/87/97/108/119/125			ND		3.03
98	93/98/100/102			ND		2.02
99	33/30/100/102			ND		0.505
100	93/98/100/102			ND		2.02
100	90/101/113			ND		1.52
102	93/98/100/102			ND		2.02
102	33/30/100/102			ND		0.505
103				ND		0.505
105				ND		0.505
106				ND		0.505
107	107/124			ND		1.01
108	86/87/97/108/119/125			ND		3.03
109	00/07/37/100/113/123			ND		0.505
110	110/115			ND		1.01
111	110/119			ND		0.505
112				ND		0.505
113	90/101/113			ND		1.52
114	30/101/110			ND		0.505
115	110/115			ND		1.01
116	85/116/117			ND		1.52
117	85/116/117			ND		1.52
118	00/110/11/			ND		0.505
119	86/87/97/108/119/125			ND		3.03
120	00,01,01,100,110,120			ND		0.505
121				ND		0.505
122				ND		0.505
123				ND		0.505
124	107/124			ND		1.01
125	86/87/97/108/119/125			ND		3.03
126	00,01,01,100,110,120			ND		0.505
127				ND		0.505
128	128/166			ND		1.01
129	129/138/163			ND		1.52
130	120, 100, 100			ND		0.505
131				ND		0.505
132				ND		0.505
133				ND		0.505
134	134/143			ND		1.01
135	135/151			ND		1.01
				=		··· • •

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

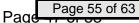
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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-27370 P101222A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
136				ND		0.505
130				ND		0.505
138	129/138/163			ND		1.52
139	139/140			ND		1.01
140	139/140			ND		1.01
140	133/140			ND		0.505
142				ND		0.505
143	134/143			ND		1.01
144				ND		0.505
145				ND		0.505
146				ND		0.505
147	147/149			ND		1.01
148				ND		0.505
149	147/149			ND		1.01
150				ND		0.505
151	135/151			ND		1.01
152	100/101			ND		0.505
153	153/168			ND		1.01
154	100/100			ND		0.505
155				ND		0.505
156	156/157			ND		1.01
157	156/157			ND		1.01
158	100/107			ND		0.505
159				ND		0.505
160				ND		0.505
161				ND		0.505
162				ND		0.505
163	129/138/163			ND		1.52
164	120/100/100			ND		0.505
165				ND		0.505
166	128/166			ND		1.01
167	120/100			ND		0.505
168	153/168			ND		1.01
169	100,100			ND		0.505
170				ND		0.505
171	171/173			ND		1.01
172				ND		0.505
173	171/173			ND		1.01
174				ND		0.505
175				ND		0.505
176				ND		0.505
177				ND		0.505
178				ND		0.505
179				ND		0.505
180	180/193			ND		1.01

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

X = Outside QC Limits

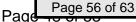
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Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-27370 P101222A_09

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/Kg	ng/Kg	ng/Kg
181				ND		0.505
182				ND		0.505
183	183/185			ND		1.01
184				ND		0.505
185	183/185			ND		1.01
186				ND		0.505
187				ND		0.505
188				ND		0.505
189				ND		0.505
190				ND		0.505
191				ND		0.505
192				ND		0.505
193	180/193			ND		1.01
194				ND		0.758
195				ND		0.758
196				ND		0.758
197	197/200			ND		1.52
198	198/199			ND		1.52
199	198/199			ND		1.52
200	197/200			ND		1.52
201				ND		0.758
202				ND		0.758
203				ND		0.758
204				ND		0.758
205				ND		0.758
206				ND		0.758
207				ND		0.758
208				ND		0.758
209				ND		0.758

Conc = Concentration

- EML =Method Specified Reporting Limit (1668A)
- EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable NC = Not Calculated

* = See Discussion

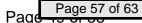
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RT = Retention Time

I = Interference

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Method 1668A Polychlorobiphenyl **Blank Analysis Results**

Client Sample ID	D
Lab Sample ID	В
Filename	Р

FBLKVZ LANK-27370 101222A_09

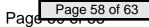
Congener Group	Concentration ng/Kg	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	ND	
Total Trichloro Biphenyls	ND	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
Decachloro Biphenyls	ND	
Total PCBs	ND	

ND = Not Detected

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Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-27371
Filename	P101222A_10
Total Amount Extracted	951 mL
ICAL ID	P101222A02
CCal Filename(s)	P101222A_01
Method Blank ID	BLANK-27370

MatrixWaterDilutionNAExtracted12/21/2010 14:00Analyzed12/22/2010 17:27Injected ByBAL

	N	Native Analy	es	Labeled Analytes			
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recove	ry
1	1.0	1.20	120	2.0	0.0181	1	IR
3	1.0	1.19	119	2.0	0.110	5	R
4	1.0	1.04	104	2.0	0.0897	4	R
15	1.0	1.14	114	2.0	0.518	26	R
19	1.0	1.07	107	2.0	0.244	12	R
37	1.0	1.01	101	2.0	1.28	64	
54	1.0	1.10	110	2.0	0.494	25	R
81	1.0	1.05	105	2.0	1.55	77	
77	1.0	0.973	97	2.0	1.62	81	
104	1.0	1.00	100	2.0	0.857	43	
105	1.0	1.07	107	2.0	1.68	84	
114	1.0	1.05	105	2.0	1.68	84	
118	1.0	1.09	109	2.0	1.66	83	
123	1.0	1.06	106	2.0	1.65	82	
126	1.0	1.01	101	2.0	1.73	87	
155	1.0	0.983	98	2.0	1.19	60	
156/157	2.0	2.14	107	4.0	3.38	84	
167	1.0	1.07	107	2.0	1.72	86	
169	1.0	1.03	103	2.0	1.69	85	
188	1.0	0.982	98	2.0	1.52	76	
189	1.0	1.00	100	2.0	1.84	92	
202	1.0	1.01	101	2.0	1.65	83	
205	1.0	1.02	102	2.0	1.72	86	
206	1.0	1.00	100	2.0	1.58	79	
208	1.0	1.01	101	2.0	1.62	81	
209	1.0	1.16	116	2.0	1.36	68	

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

* = See Discussion

ng = Nanograms

I = Interference

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Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-27372
Filename	P101222A_11
Total Amount Extracted	997 mL
ICAL ID	P101222A02
CCal Filename(s)	P101222A_01
Method Blank ID	BLANK-27370

MatrixWaterDilutionNAExtracted12/21/2010 14:00Analyzed12/22/2010 18:29Injected ByBAL

	1	Native Analy	tes	Labeled Analytes			
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recove	ry
1	1.0	1.12	112	2.0	0.131	7	R
3	1.0	1.22	122	2.0	0.284	14	R
4	1.0	1.11	111	2.0	0.227	11	R
15	1.0	1.14	114	2.0	0.744	37	
19	1.0	1.01	101	2.0	0.435	22	R
37	1.0	1.07	107	2.0	1.49	74	
54	1.0	1.15	115	2.0	0.667	33	
81	1.0	1.04	104	2.0	1.72	86	
77	1.0	1.03	103	2.0	1.74	87	
104	1.0	1.02	102	2.0	1.03	51	
105	1.0	1.08	108	2.0	1.82	91	
114	1.0	1.03	103	2.0	1.80	90	
118	1.0	1.07	107	2.0	1.79	90	
123	1.0	1.06	106	2.0	1.75	88	
126	1.0	0.998	100	2.0	1.85	93	
155	1.0	0.993	99	2.0	1.31	66	
156/157	2.0	2.12	106	4.0	3.49	87	
167	1.0	1.06	106	2.0	1.79	90	
169	1.0	1.00	100	2.0	1.75	88	
188	1.0	0.999	100	2.0	1.54	77	
189	1.0	1.05	105	2.0	1.87	94	
202	1.0	0.980	98	2.0	1.67	84	
205	1.0	0.994	99	2.0	1.75	88	
206	1.0	1.01	101	2.0	1.55	77	
208	1.0	1.01	101	2.0	1.60	80	
209	1.0	1.11	111	2.0	1.36	68	

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

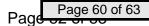
* = See Discussion

ng = Nanograms

I = Interference

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A

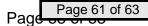
Spike Recovery Relative Percent Difference (RPD) Results

Client	Test America				
Spike 1 ID Spike 1 Filename	LCS-27371 P101222A_10	Spike 2 Spike 2	2 ID LCSD-2 2 Filename P10122		
Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD	
2-MoCB 4-MoCB 2,2'-DiCB 4,4'-DiCB 2,2',6-TrCB 3,4,4'-TrCB 2,2',6,6'-TeCB 3,3',4,4'-TeCB 3,4,4',5-TeCB 2,2',4,6,6'-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,2',4,4',6,6'-HxCB (156/157) 2,3',4,4',5,5'-HxCB 3,3',4,4',5,5'-HxCB 3,3',4,4',5,5'-HxCB 2,2',3,3',5,5',6,6'-OcCl 2,3',3',4,4',5,5',6-OcCl 2,2',3,3',4,4',5,5',6,6'-No 2,2',3,3',4,5,5',6,6'-No 2,2',3,3',4,5,5',6,6'-No Decachlorobiphenyl	3 205 CB 206	$\begin{array}{c} 120\\ 119\\ 104\\ 114\\ 107\\ 101\\ 110\\ 97\\ 105\\ 100\\ 107\\ 105\\ 109\\ 106\\ 101\\ 98\\ 107\\ 107\\ 107\\ 103\\ 98\\ 100\\ 101\\ 102\\ 100\\ 101\\ 116\end{array}$	$\begin{array}{c} 112\\ 122\\ 111\\ 114\\ 101\\ 107\\ 115\\ 103\\ 104\\ 102\\ 108\\ 103\\ 107\\ 106\\ 100\\ 99\\ 106\\ 106\\ 100\\ 100\\ 100\\ 105\\ 98\\ 99\\ 101\\ 101\\ 101\\ 111\\ \end{array}$	$\begin{array}{c} 6.9\\ 2.5\\ 6.5\\ 0.0\\ 5.8\\ 5.8\\ 4.4\\ 6.0\\ 1.0\\ 2.0\\ 0.9\\ 1.9\\ 1.9\\ 1.9\\ 1.9\\ 0.0\\ 1.0\\ 1.0\\ 1.0\\ 0.9\\ 0.9\\ 3.0\\ 2.0\\ 4.9\\ 3.0\\ 3.0\\ 3.0\\ 1.0\\ 0.0\\ 4.4\end{array}$	

%REC = Percent Recovered RPD = The difference between the two values divided by the mean value

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SUBCONTRACT ORDER

PT20344

City of Portland Water Pollution Control Lab

W10L059

SENDING LABORATORY:		RECEIVING LAB	ORATORY:		
City of Portland Water Pollution C 6543 N. Burlington Ave Portland, OR 97203 Phone: 503-823-5600 Fax: 503-823-5656 Invoice To: Charles Lytle using P		TestAmerica 9405 SW Nimbus Ave Beaverton, OR 97008 Phone :(503) 906-9200 Fax: (503) 906-9210			
WPCL Project Name			TURNAROUN	ID REQUEST	
Portland Harbor		X Standar	rd		
Analysis	Due	Expires	Laboratory ID	Comments	
Sample ID: W10L059-01	Water	Sampled:12/07/10 18:52			
Out-PCB Congeners 209 (Pace)	12/22/10 17:00	12/14/10 18:52			<u></u>
Containers Supplied:					
G amber 1L (A)				· · · · · · · · · · · · · · · · · · ·	
Sample ID: W10L059-02	Water	Sampled:12/07/10 19:08		•	
Out-PCB Congeners 209 (Pace)	12/22/10 17:00	12/14/10 19:08			· · ·
Containers Supplied:					•
G amber 1L (A)	·····		· ·	· ·	
Sample ID: W10L059-03	Water	Sampled:12/07/10 18:12			
Out-PCB Congeners 209 (Pace)	12/22/10 17:00	12/14/10 18:12	· · ·	· · · · · · · · · · · · · · · · · · ·	
Containers Supplied:					
G amber 1L (A)	• • • • • • • • • • • • • • • • • • •				<u> </u>
Sample ID: W10L059-04	Water	Sampled:12/07/10 18:23			
Out-PCB Congeners 209 (Pace)	12/22/10 17:00	12/14/10 18:23			
Containers Supplied:					
G amber 1L (A)	·	· · · · · · · · · · · · · · · · · · ·			
Sample ID: W10L059-05	Water	Sampled:12/07/10 18:32			
Out-PCB Congeners 209 (Pace)	12/22/10 17:00	12/14/10 18:32	· · · · · · · · · · · · · · · · · · ·		
Containers Supplied:					
G amber 1L (A)		·····	······································	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
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12 pi 10 the 12/9/10 0 14:20 Ô Released Received By 12/9/10 150 <u>12</u> Date 7125 jan 0 U RA IN Received By Date Released By 2 Page 62 of 63

Portland Sample Control Checklist Work Order #:	Work Order #: Date/Time Received: 12/09/10 Client Name: OrT/And Port/And Project Name: OrT/And Hawbor - W/DLOS9 Time Zone: EDT/EST CDT/CST MDT/MST PDT/PST AK OTHER Unpacking Checks: Temperature out of Ran Not enough or No Ic Cooler (s):	
Work Order #: Image: Star Star Star Star Star Star Star Star	Work Order #: Date/Time, Received: 12/09/10 Client Name: Ort / And How how - W/DLDS9 Project Name: Port / And How how - W/DLDS9 Time Zona: Impacking Checks: PDT/PST AK OTHER Unpacking Checks: Imperature out of Ram Not enough or No Io Cooler (s):	
Work Order #: Image: Star Star Star Star Star Star Star Star	Work Order #: Date/Time, Received: 12/09/10 Client Name: OrT/And How how - W/DLDS9 Project Name: OrT/And How how - W/DLDS9 Time Zona: BDT/EST CDT/CST MDT/MST PDT/PST AK OTHER Unpacking Checks: Temperature out of Ran Not enough or No Ic Cooler (s):	
Client Name: Ort / And Inc. 2014/05/9 Project Name: Ort / And Haw hor ~ W D L 0 5 9 Time Zone: EDT/EST CDT/CST MDT/MST PDT/PST AK OTHER Unpacking Checks: Temperature out of Range: Not enough or No Ice Ice Metted Win 4 Hrs of collection Impacting Checks: Collegi #1 Digi #2 IR Con Win 4 Hrs of collection Impacting Checks: Collegi #1 Digi #2 IR Con Uplastic Glass) Ice Metted Impacting Checks: Collegi #1 Digi #2 IR Con Uplastic Glass) Ice Not Needed Raytek Other: Intrast/Win 4 Hrs of collection Ice Not Needed Other: Intrast/Win 4 NA Yes No Impact I I If ESI client, were temp blanks received? If no, document on NOD. Impact I Ino, document on NOD. Impact I Ino, document on NOD. Impact I Ino, document on NOD. Impact I I I If ESI client, were temp blanks received by "& "relinquished by" signatures with date & time? If no, document on NOD. Impact I Ino, document on NOD. I I I I Is ESI client, were temp blanks received by " & "relinquished by" signatures with date & time? If no, document on NOD. Impact I Ino, document on NOD.	Client Name: Other Port and How how - W ID LOS9 Time Zone: EDT/EST CDT/CST MDT/MST PDT/PST AK OTHER Unpacking Checks: Temperature out of Ram Cooler (s): Temperature (s):	1-10
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Cooler (s):	Cooler (s):	
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Image: Construct of the second sec	Image: Construct of the construction of the constructio	æ
Raytek Other: Other: Other: N/A Yes No GEL Image: Docse BLUE OTHER: Image: Docse Image: Docse BLUE Other: N/A Yes No Image: Docse BLUE OTHER: Image: Docse Image: Docse Image: Docse BLUE OTHER: Image: Docse Image: Docse Image: Docse Image: Docse Image: Docse BLUE OTHER: Image: Docse Image: Docse Image: Docse Imag	Raytek Other: Ice used: (circle one) GEL OOSE BLUE OTHER: Initials/ N/A Yes No Initials/ Initials/ Initials/ N/A Yes No Initials/ Initials/ Initials/ Image: Initials/ Initials/ Initials/ Initials/ Image: Initinitinitials/ <	tion
Ice used: (circle one) GEL LOOSE BLUE OTHER: Initials N/A Yes No Initials Initials Initials Initials Initials Initials Initials Initials Initi	Ice used: (circle one) GEL LOOSE BLUE OTHER:	
N/A Yes No Image: Second S	N/A Yes No Image: Second S	$\widehat{\mathcal{A}}$
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∑ □ 16. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.		

9405 SW Nimbus Ave, Beaverton OR 97008 tel 503.906.9200 fax 503.906.9210 www.testamericainc.com

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