FINAL

PRELIMINARY ASSESSMENT
OUTFALL 33 DRAINAGE AREA

City of Portland Outfall 33
Portland, Oregon

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ABBREVIATIONS

AST	aboveground storage tank
AMSL	above mean sea level
ACM	asbestos-containing material
BES	City of Portland Bureau of Environmental Services
bgs	below ground surface
CFR	code of federal regulation
City	City of Portland
CEG	conditionally exempt generator
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CESQG	conditionally exempt small quantity generator
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichlorethane
DDx	sum of DDT and breakdown products DDE and DDD
DEQ	Oregon Department of Environmental Quality
DOT	Oregon Department of Transportation
DPSC	Downtown Portland Sediment Characterization
ERNS	Emergency Response Notification System
ECSI	Environmental Cleanup Site Information
ESA	Environmental Site Assessment
EPA	United States Environmental Protection Agency
HSIS	Oregon Hazardous Substance Information System
JSCS	Joint Source Control Strategy
kVa	kilovolt ampere
LQG	large quantity generator
mg/kg	milligram per kilogram
mg/L	milligram per liter
NPDES	National Pollutant Discharge Elimination System
NWTPH-Dx	diesel- and heavy oil-range petroleum hydrocarbons
OWS	oil-water separator
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PGE	Portland General Electric
PSC	PGE Portland Service Center
PA	Preliminary Assessment
RCRA	Resource Conservation and Recovery Act of 1976
RM	river mile
SQG	small quantity generator
TPH	total petroleum hydrocarbons
TCLP	Toxicity Characteristic Leaching Procedure

ABBREVIATIONS

ug/kg	microgram per kilogram
ug/L	microgram per liter
URS	URS Corporation
VCP	Voluntary Cleanup Program

1.0 INTRODUCTION

URS Corporation (URS) conducted this Preliminary Assessment (PA) on behalf of Portland General Electric Company (PGE) for the City of Portland's (City's) Outfall 33 and the associated stormwater drainage area. Outfall 33 is located within the Downtown Reach of the Willamette River, along the east bank at river mile (RM) 13.1 (Figure 1). The 2008 Downtown Portland Sediment Characterization (DPSC) of the Willamette River collected one grab and one core sediment sample adjacent to Outfall 33 (GSI, 2009). The Oregon Department of Environmental Quality (DEQ) conducted an initial review of the data and designated RM 13.1 as a priority area (DEQ, 2009a) based on elevated concentrations of PCBs, DDx, chlordanes, and dioxins.

A PA was identified as the appropriate method to gather and summarize data for the Outfall 33 drainage area, identify data gaps, and to inform future site decisions. This work is proceeding in accordance with DEQ No. LQSR-NWR-10-01 Order Requiring Remedial Investigation issued on January 8, 2010.

The purpose of a PA is to evaluate whether a site is releasing, has released, or could release hazardous substances to the environment and whether a response action may be required. This PA compiles available data associated with Outfall 33 itself and properties within the Outfall 33 drainage area. Unlike PAs prepared for individual upland sites, this PA does not address potential concerns related to the exposure of upland receptors to upland media. Instead, the scope of the PA is limited to the evaluation of potential historical or current sources of contamination to the river sediments.

This PA includes the site description, history and operation activities of properties within the drainage network (Section 2); information on potential sources of contamination (Section 3); pathways for migration of contaminants and receptors or targets affected by contamination (Section 4); and summary and conclusions (Section 5).

2.0 BACKGROUND INFORMATION

This section presents site description information, ownership and operational history, and regulatory history for those properties within the City Outfall 33 drainage area. Outfall 33, also referred to as the Clay Street Outfall in some documents, is a municipal stormwater outfall located on the east bank of the Willamette River at RM 13.1. The approximate Outfall 33 drainage area includes properties identified in Section 2.1.

The preparation of this PA drew from a variety of public and private information sources. These sources included:

- DEQ files for Environmental Cleanup Site Information (ECSI) sites 4632 (Rexel Taylor property) and 4236 (Holman Building). These files included project reports, notes, and figures.
- Historical photographs obtained from the Oregon Historical Society, University of Oregon, and the City of Portland.
- An Environmental Data Resources, Inc. (EDR) Radius Map Report with GeoCheck and Sanborn Fire Insurance maps (EDR, 2009).
- Online databases including DEQ Profiler (DEQ, 2009b), Oregon Water Resources Department (WRD) Well Log Query (WRD, 2009a) and Water Rights Placard databases (WRD, 2009b), and the City's Portlandmaps.com (COP, 2009).
- PGE response to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Section 104(e) request (PGE, 2009).

2.1 Site Description

The Outfall 33 drainage area is located in the southeast quarter of Section 3, Township 1 South, Range 1 East of the Willamette Meridian, in the City of Portland, County of Multnomah, State of Oregon. It is bounded to the north by Hawthorne Boulevard, to the south by the south side of Market Street, to the east by Third Avenue, and to the west by the Willamette River. The Outfall 33 drainage area is approximately 16.14 acres and occupies a total of 11 city blocks including 1496, 1020, 1021, 1040, 1482, 1019, 1022, 1039, 1483, 1478, and 1450. This drainage area is the specific focus of the PA since stormwater mains on these blocks all discharge to Outfall 33 (Figure 2). The area is also serviced by the City's sanitary sewer system (Figure 3). As shown on Figure 3, stormwater runoff east of SE Second Avenue is usually combined with sanitary effluent and piped to the Columbia Boulevard Wastewater Treatment Plant. However, during periods of high flow, the combined storm and sanitary water may be diverted to the river through Outfall 33 at the diversion point on the corner of SE Clay Street and Second Avenue.

Unlike most outfalls, the Outfall 33 pipe does not extend from the riverbank. Instead, the outfall pipe is buried within the riverbank and stormwater water discharges to the subsurface. As discussed further in Section 2.3, this geometry has potentially significant implications for the fate of discharged stormwater solids. Unlike typical stormwater outfalls that discharge directly

to a waterway, solids discharged from the Outfall 33 pipe probably do not enter the surface water and settle on top of preexisting sediment. Instead, stormwater solids are likely discharged to the subsurface within the riverbank and likely have limited ability to be transported downstream. Depending on the conditions at the end of the pipe, sediment transported through the pipe (including solids washed into the stormwater system during the 2006 fire at the Rexel Taylor property) may be accumulating within the pipe and may not be transported to the river sediments.

The Outfall 33 drainage area is part of a historical industrial district, developed with parking lots, commercial/industrial buildings, and occasionally retail stores. Portland Community College also has a public building within the drainage area. The current owner and corresponding address, operations, and buildings at these locations are provided below.

Block Number	Current Owner	Address	Operations	Buildings/Structures
1019	Portland Community College	1626 SE Water Avenue	Classes and meetings, Central Portland Workforce Training Center	Three-story public building
1020	PGE	1510 SE Water Avenue	PGE museum, office space, electrical transformer and maintenance supplies storage, and parking.	Two-story warehouse office building with basement (Hawthorne Building) and four non-attached covered storage structures.
1021	COE Properties, LLC	125 SE Clay Street	Auto parts warehouse	Warehouse
1022	COE Properties, LLC	120 SE Clay Street	Auto garage, Speed's Auto Services	Auto garage
1039	HMB Corporation	240 SE Clay Street	None	Building shell of former Rexel Taylor warehouse. Structure is currently supported by temporary support beams, installed after the fire, site fenced

Block Number	Current Owner	Address	Operations	Buildings/Structures
1040	(b) (6) [redacted] Pitman Properties LLC	207 SE Clay 1525 SE Third Street	Rose's Equipment & Supply Distribution Pitman Restaurant Equipment Distribution	Warehouse Warehouse
1450	HMB Corporation HMB Corporation	1709 SE Third Avenue 1717 SE Third Avenue	Rexel Taylor Electric Supply Warehouse Vacant land	Warehouse Vacant land
1478	Summit Properties Inc	120 SE Market Street	Lemma Wine Company	Warehouse
1482	ODOT	Not available	Vacant land and parking for Portland Community College	Vacant land and parking
1483	Oregon Museum of Science and Industry (OMSI)	1701 SE Water Avenue	Warehouse	Warehouse
1496	ODOT ODOT/Rivers East LLC	49 SE Clay Street 1515 SE Water Avenue	Vacant land Office space	Vacant land Three-story warehouse (Holman Building)

Notes:
ODOT = Oregon Department of Transportation
*Information derived from www.PortlandMaps.com (COP, 2009). Further information available from Phase I Environmental Site Assessment, 240 SE Clay Street (WorleyParsons Komex, 2008a)

The Outfall 33 drainage area is zoned General Industrial 1 (IG1), General Employment 1 (EG1), or General Employment 2 (EG2) and is part of the Central Eastside Industrial Council business district (Figure 4). These zoning designations allow a wide variety of industrial, commercial, and institutional primary uses. Approved industrial uses for all three zones include manufacturing, wholesale sales, and freight movement. Approved commercial uses for all three zones include self-service storage and vehicle repair. Retail sales, office use, and commercial

parking are allowed as limited or conditional uses in all three zones. Approved institutional uses for all three zones include parks. Schools, medical centers, daycare centers, and religious institutions are allowed in zones EG1 and EG2 but are not allowed under IG1, with the exception of daycares which are allowed limited or conditional use under IG1. All three zones also allow residential household uses as conditional uses.

2.2 Ownership and Operational History

Information on the historical ownership and operational activities of properties within the Outfall 33 drainage area was gathered from historical aerial photographs and Sanborn Fire Insurance maps. The ownership and operational history of these properties is typical of early twentieth century industrial development. Initial development of certain parcels dates back to the late 1800s. URS requested Sanborn Fire Insurance maps of the subject area from EDR. The Sanborn Fire Insurance Maps provided by EDR are dated 1889, 1901, 1909, 1924, 1950, and 1969. Relevant historical photographs of the area obtained from the Oregon Historical Society, University of Oregon, and City of Portland are dated 1928, 1936, 1940, 1948, 1950, 1958, 1970, 1980, and 1992. A chronological summary of the information provided on the Sanborn Fire Insurance Maps is provided in Table 1. Block numbers listed in this table and discussed below are shown on Figure 2. The available Sanborn Fire Insurance Maps are provided in Appendix A and select historical and aerial photos are provided in Appendix B.

Table 1 also lists contaminants generally associated with the property uses identified for each block. The materials and associated contaminants actually handled, used, stored, and treated at each site are unknown. Historical disposal practices are also unknown. Previous site owners and operators may have disposed of site materials through sewer lines flowing directly to the river, through surface application, by burning, by depositing at a municipal landfill, and/or by using locally as fill. A comprehensive list of past owners and operators was not available. A better understanding of past operations and disposal activities would help refine the general historical site activities presented here.

URS was unable to locate any information on over-water activities or historical spills to water. Based on the presence of a dock, the over-water area was used and some amount of spills probably occurred.

A review of the EDR Radius Map Report with GeoCheck® and DEQ Profiler website (DEQ, 2009b) was completed for sites within the Outfall 33 drainage area to identify those sites with known or potential contaminant concerns. The EDR database report is included in Appendix C. A copy of the reports from the DEQ Facility Profiler website is included in Appendix D. Site data were also derived from the ECSI database for select parcels that are registered with ECSI and have information available (i.e., those with known or potential contamination from hazardous substances).

The ECSI database includes two properties within the Outfall 33 drainage area: the Holman Building at 49 SE Clay Street (Block 1496) and Rexel Taylor Electrical Supply at 240 SE Clay

Street (Block 1039). A description of the regulatory databases that the sites are registered in is provided in Section 2.3. Available information regarding each block is summarized below.

Block Number 1019

The irregularly shaped Block 1019 is located east of the I-5 freeway and was largely undeveloped for much of the twentieth century. The Union Pacific Railroad - Portland Traction Company operated along Water Avenue. DEQ records indicate that at 1640 SE Water Avenue, during tank decommissioning, one or more regulated USTs were observed to have released diesel and/or heating oil to soil and groundwater (DEQ, 2009b). Cleanup of this site (LUST Log Number 26-90-0438, UST ID 8313) was initiated on November 13, 1990 and completed on March 5, 1992 using a soil matrix cleanup. The status of this LUST incident is closed, cleanup completed. The property is currently owned by Portland Community College.

Block Number 1021

Located directly south of Hawthorne Boulevard and directly east of the PGE Hawthorne Building, Block 1021 has been operated as an automotive parts warehouse since the early 1990s. Currently owned by COE Properties LLC and operated by Speeds Auto Service Group at 125 SE Clay Street, the site was a conditionally exempt generator (CEG) of hazardous waste from November 1991 through December 2003 (DEQ, 2009b). This facility was assigned EPA ID ORD987197332.

Block Number 1022

Located south of Clay Street and directly west of the Rexel Taylor property, Block 1022 operated as a flour and grain mill for the first half of the twentieth century. Currently owned by COE Properties LLC and operated by Speeds Auto Service Group at 120 SE Clay Street, this facility was a CEG of hazardous waste from November 1992 through December 2003 (DEQ, 2009b). This facility was assigned EPA ID ORD987198330. DEQ records indicate that during tank decommissioning, one or more regulated USTs were observed to have released waste oil to soil (DEQ, 2009b). Soil impact was delineated and cleanup of the site (LUST Log Number 26-97-0486, UST ID 5349) was initiated on June 26, 1997 and completed on January 12, 2000. The status of this LUST incident is closed, cleanup completed.

Block Number 1040

Located directly south of Hawthorne Boulevard and directly north of the Rexel Taylor property, Block 1040 has been operated as a warehouse facility for some time. Currently owned by (b) (6) and operated as Rose Equipment & Supply Inc. at 201 SE Clay Street, DEQ records indicate that during site assessment activities one or more underground storage tanks (USTs) were observed to have released heating oil to soil (DEQ, 2009b). Cleanup of this

site (LUST Log Number 26-95-0342) involved tank decommissioning and was initiated on December 19, 1995 and completed on February 21, 1996 using a soil matrix cleanup. The status of this LUST incident is closed, cleanup completed. The property continues to operate as Rose Equipment & Supply warehouse.

Block Number 1450

Located directly south of the Rexel Taylor property that was destroyed by fire, Block 1450 is the site of a warehouse that is currently owned by HMB Corporation, represented by Mr. Bill Taylor.

Block Number 1478

This irregularly-shaped block west of 2nd Ave and south of Market St. was undeveloped until the mid-1900's when a warehouse was constructed. The property is currently owned by Summit Properties Inc and is the site of a warehouse operated by Lemma Wine Company.

Block Number 1482

Located west of Water Ave and North of Market St., this block contained a freight yard, depot, and warehouse during the early 1900's. It was converted to a parking lot sometime prior to 1969 and is currently owned by ODOT.

Block Number 1483

Located west of Water Ave and South of Market St., this block is currently owned by OMSI. It was formerly a portion of PGE's Station L property. This block is not discussed further in this PA, but is instead discussed as part of the former Station L property which is addressed in a separate PA for the River Mile 13.1 - 13.5 Drainage Areas (URS, 2010a).

Block Number 1496 - Holman Building

This irregularly shaped block is located along the east side of the Willamette River, directly south of Hawthorne Boulevard. Developed in the twentieth century, the site has been in operation for most of the last 100 years. The block is divided into three parcels owned and operated by Oregon Department of Transportation (ODOT) with the middle and eastern parcel leased to Rivers East, LLC.

Rivers East, LLC maintains a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge for construction activities greater than 1 acre (DEQ, 2009b)

In May 1993, a 6,000 gallon UST containing heating oil and 500 gallon UST of unknown origin were decommissioned and two confirmation soil samples were collected (DEQ, 2009b).

Analytical results indicated no detectable concentrations of diesel, gasoline, or heavy oil in the underlying soils (DEQ, 2005).

Investigation reports available for the ODOT Holman Building include a November 1997 ODOT study and an August 2004 Hart Crowser study (Hart Crowser, 2004). Note that a final report was not generated for the ODOT site investigation; only site maps, boring logs, and lab results were available. This information was summarized in the Hart Crowser Report (Hart Crowser, 2004). Neither of the reports provided additional ownership or operational history information for the Holman building.

ODOT completed seven push probe borings in and around the building in October 1997 to investigate evidence of any subsurface releases in the areas of the elevators, loading docks, and former USTs (Hart Crowser, 2004; DEQ, 2004). Soil and groundwater samples were collected from the borings. Laboratory analysis of the samples detected phenol, ethylbenzene, and total xylenes in borings located in/west of the building loading dock.

DEQ records indicate that ODOT filed as a CEG and reported in 1998 and 1999 (DEQ, 2009b). The facility was assigned EPA ID ORD000009241. The cause of the property's CEG status could not be confirmed.

In August 2004, Hart Crowser conducted a field effort to investigate heavy oil staining observed on the concrete pad of the eight hydraulic levelers in the loading dock during recent construction activities to remodel the building. The results of soil samples collected from below the concrete slab in each of the leveler bays confirmed that surface soils contained TPH (Hart Crowser, 2004). The site was registered with ECSI (ECSI Number 4236) on October 26, 2004. PCB analyses were completed on soil samples only; no PCBs were detected. Soil and groundwater samples were also analyzed for TPH, polycyclic aromatic hydrocarbons (PAHs), semivolatile organic compounds (SVOCs), and volatile organic compounds (VOCs). At the direction of Hart Crowser, up to 3 feet of contaminated soil were removed. Additional soil beyond 3 feet could not be excavated due to the presence of a concrete beam.

Site closure was requested on the grounds that site-impacted soils did not pose a risk to human or ecological health due to the lack of complete pathways. Additional TPH-containing soil around the sub-grade concrete beam was left in place. Building remodeling activities completed in September 2004 buried the soil beneath 6 feet of backfilled soil and gravel and capped the entire area with a concrete slab. The DEQ submitted a no further action determination on January 6, 2005 (DEQ, 2005). A summary of the regulatory history, site inspections, and analytical results for the Holman Building site investigation is provided in Section 2.3.

Block Number 1020 – Hawthorne Building

This block is located directly south of Hawthorne Boulevard and has been a PGE-affiliated operation since 1905. The following information for the PGE Hawthorne Building was summarized from the PGE response to the CERCLA Section 104(e) request (PGE, 2009).

Block 1020 was developed sometime between 1889 and 1901, at which point operations included a harvesting machinery depot building, a stable (with horse stalls and baled hay storage), an adjoining blacksmith and wagon shop, a meat distributor and smokehouse, and a model and brass foundry building with brass furnaces. The Sanborn Maps do not identify the owner of the parcel or the structures and there is no information regarding the Land Company of Oregon's activities conducted on the parcel(s) prior to PGE ownership.

- In March 1905, the Oregon Water, Power, & Railway Company (a PGE predecessor company) purchased the main central parcel from the Land Company of Oregon..The two-story Hawthorne Building was originally built in 1911 for use as a railway depot and parking garage by PGE predecessor companies. Railcar loading occurred from the loading dock located on the east side of the building. The basement was used as a parking garage from 1911 until 1928.
- In 1935, PGE's Line Department, Meter Department, Electrical Maintenance & Construction (EM&C) Department, Transformer Maintenance Department, and Light and Power Repair and Range Installation Department occupied the building. PGE's EM&C Department relocated to another PGE property in 1991, the Transformer Maintenance Department relocated to PGE's Portland Service Center (PSC) in the mid-1980s, the Meter Department relocated to another PGE property in the mid-1980s, and the Line Department relocated to another PGE property in approximately 2000. The Power Repair and Range Installation Department dissolved in the mid-1970s, at which point the PGE Corporate Shops (e.g., welders, and steel and aluminum fabricators) moved into the Hawthorne Building.
- Bushing repair occurred in the basement of the Hawthorne Building up until approximately 1973.
- Additional early historical uses of the building included, but were not limited to, automobile parking; automotive repair and metal shop, including acid and caustic baths for cleaning metals, parts cleaning, and a paint booth located in the basement; cleaning, repair, and maintenance of electrical equipment (e.g., transformers), also located in the basement; and the storage of associated supplies/wastes.
- From 1972 to 1978, there were six operating 1-phase transformers (1,000 kVA) at the property. According to PGE, these transformers were likely located in the underground concrete vault (located under the parking lot along the southern property boundary). These transformers were used to supply power to the Hawthorne Building and may have also distributed power to other adjacent properties.
- The second floor of the Hawthorne Building has primarily been used as PGE office space (Cash Remittance, Automated Mail Services, and Print Shop Services) and a PGE training center. A portion of the office space was donated to the non-profit group Committed Partners for Youth of the Boys and Girls Club from the 1990s to 2005. PGE

Print Shop Services was housed in the building from 1994 to 2004, at which point it was moved to the World Trade Center.

- In 2000, the PGE Corporate Shops moved out and the PGE Underground Department moved into the Hawthorne Building in 2001.
- In 2000, a vault transformer and a pad-mounted transformer were installed. These transformers distribute power to the Hawthorne Building and may distribute power to adjacent properties. The vault transformer was removed prior to 2006 and returned to the PGE transformer inventory.
- Since 2000, PGE activities at the Hawthorne Building have been primarily limited to office/training activities (second floor); routine maintenance of on-site systems, including HVAC, passenger elevator, on-site compressors, and plumbing filters; and some welding. The building is currently used to store new transformers (with oil containing less than 1 milligrams per liter [mg/L] PCBs), surplus (used) transformers (with oil containing less than 50 mg/L PCBs), and maintenance supplies for off-site usage. It is also used for refilling fire extinguishers and to house the PGE museum. Lead cable and lead-containing potheads are also stored in the Hawthorne Building on an interim basis until they are recycled/disposed of.

DEQ records indicate that PGE operated as a small quantity generator (SQG) of hazardous waste from August 1991 through November 1992, large quantity generator (LQG) of hazardous waste in 1993, and as a CEG of hazardous waste from 1994 through 2007. This facility was assigned EPA ID ORD981763923.

The disposal or placement of hazardous substances, waste, or materials was not expected to have occurred on or at any part of the main parcel prior to PGE's purchase/acquisition. However, the potential presence of oil contamination in the soils of the eastern parcel (the eastern half of the parking lot, shown in Figure 2) was suspected by PGE. Prior to purchasing this parcel in 2008, PGE contracted with Hahn and Associates, Inc. to conduct a Phase I Environmental Site Assessment (ESA) on the entire property in 2006 (Hahn and Associates, 2006). Based on the results of the Phase I ESA, PGE contracted with Hahn and Associates, Inc. to conduct a Phase II ESA in 2007, which focused on the eastern parcel and assessed any potential impacts to soil and groundwater (Hahn and Associates, 2007). The Phase II ESA concluded that although there were elevated levels of contaminants in the soil and groundwater beneath the eastern parcel, there is no unacceptable human health risk because there is no complete pathway for human exposure since the surface is paved/covered and the groundwater is not likely to be used for drinking water.

A potential historical source of contamination from the Hawthorne property is water that collects in a sump in the basement of the building and includes stormwater that flows down the basement loading ramp combined with water collected from the basement catch basins. This sump water may have contained contaminants (i.e., PCBs, petroleum hydrocarbons, metals, and cleaners)

from the basement wash water, floor sweepings, and minor equipment spills and was historically (prior to 1969-1984) discharged to the City's combined stormwater/sanitary or stormwater system. The Hawthorne Building was connected to the City's combined stormwater/sanitary system from approximately the 1920s until the City separated the two systems in this area in approximately 1969. Following the separation of the combined stormwater/sanitary system in this area, the sump water was discharged to the City's stormwater system until sometime between 1969 and 1984 when the discharge was re-routed to the City's sanitary system. The City of Portland sanitary sewer line that serves the Hawthorne Building is not connected to the combined stormwater overflow system; the line is connected to the waste water treatment plant with no diversion points.

Stormwater runoff from exterior portions of the property is collected in catch basins which discharge to the City's stormwater system. The City's current storm gravity main for all properties within the drainage area discharges to the Willamette River at Outfall 33.

Further information regarding site investigative activities that have occurred at the property is provided in Section 2.3. Additional information regarding the Hawthorne PGE property, including sample location maps and figures, can be found in the PGE response to the CERCLA, Section 104(e) request (PGE, 2009).

Block Number 1039 – Rexel Taylor Property

This block is located south of Clay Street and was in operation as early as 1901. Currently owned by HMB Corporation, represented by Mr. Bill Taylor, the site was occupied by the Trinidad Asphalt Paving Company Plant from approximately 1901 until some time before 1909. Crude oil USTs and dipping tanks were apparently present on site (WorleyParsons Komex, 2008a). Standard Fuel Company briefly operated at the facility in 1935. The current building was constructed on the property in 1935 by Loggers and Contractors Machinery Company for heavy machinery storage and sales. Ingersoll Rand Corporation occupied the site from 1970 to 1991 as an industrial supplier. HMB Corporation purchased the property from Ingersoll Rand in 1991 and the property was operated as Rexel Taylor Electric. The site was in operation until May 17, 2006 when a fire erupted that consumed a large portion of the material inside the building, including wiring, forklifts, and other oil-containing heavy equipment. The fire also consumed three PGE-owned electrical transformers that were located on a utility pole outside the building. These three transformers released an estimated volume of less than 10 gallons of oil (the remainder being consumed in the fire). Oil was also reported flowing from the building. Fire suppression water mixed with oil was reported to have flowed from the site to the City stormwater system and a sheen was also reported in the Willamette River. As a result of the fire and release of oil into the City stormwater system, the site was registered with ECSI (ECSI Number 4632). The property has been vacant since the fire. No additional information is available about the uses or types of equipment in the building from 1935 until 2006 (WorleyParsons Komex, 2008a; PGE, 2006).

A Phase I ESA and a Phase II ESA were reportedly completed in 1990 or 1991 as part of the property transaction to Ingersoll Rand (WorleyParsons Komex, 2008a); however these reports were unavailable for review. These assessments allegedly identified impacted soil on the site potentially caused by releases of oil from equipment stored on the property prior to 1991. The impacted soil was reportedly excavated and disposed of as a result of the Phase I ESA findings. The lack of operational history during occupation of the site by Loggers and Contractors Machinery Company and Ingersoll Rand Corporation and the lack of information related to the 1990 and 1991 investigation activities represent data gaps.

PGE conducted oil and swab sampling of the burned transformers on May 18, 2006 and detected PCB Aroclor 1242 and Aroclor 1260 (PGE, 2006). This information is included in the Transformer Oil Release Report provided in Appendix E.

In July 2008, another Phase II ESA was conducted that involved the installation of nine soil borings and the collection of sediment samples from three stormwater system drain inlets (WorleyParsons Komex, 2008b). PCBs were detected in one subsurface soil sample and one two-inlet composite stormwater solids sample collected on SE Clay Street and Second Avenue. TPH-Dx and TPH–Rx were detected in a different subsurface soil sample. PCBs and TPH were undetected in all other samples; BTEX and PAHs were undetected in all samples that were analyzed. These data are discussed in more detail in Section 2.3, below.

2.3 Regulatory History

A review of the EDR Radius Map Report with GeoCheck® was completed for sites within the Outfall 33 drainage area to identify those listed in one or more regulatory agency databases and to identify those with regulatory permits. The EDR Report (included in Appendix C) does not provide issue and expiration dates for the permits.

Section 2.2 provided a summary of database entries from both the EDR Report and DEQ records related to known or potential contaminant concerns at each site, such as UST, LUST, or storage and generation of hazardous waste. Section 3.0 provides a summary of those sites which maintain, or have maintained, hazardous waste permits. A comprehensive listing of the permits for the Hawthorne Building can be found in the PGE response to the CERCLA, Section 104(e) request (PGE, 2009).

Block Number	Site Name	Site Address	Agency Database(s)
1019	Union Pacific RR-Portland Traction	1640 SE Water Avenue	FINDS, UST, LUST
1022	Speeds Auto Service Group, Inc	120 SE Clay Street	FINDS, RCRA-CESQG, LUST, UST
1021	Auto Adventure, Inc	125 SE Clay Street	FINDS, RCRA-CESQG
1496	Rose City Rowing Club	1515 SE Water Avenue	HSIS
1020	PGE Hawthorne	1510 SE Water Avenue	FINDS, MANIFEST, RCRA-CESQG
1040	Rose Equipment & Supply Inc	201 SE Clay Street	FINDS, LUST
1040	Rose Equipment & Supply	207 SE Clay Street	FINDS, RCRA-NonGen
1496	River East Center	49 SE Clay Street	NPDES, FINDS
1496	ODOT Holman Transfer Building	49 SE Clay Street	FINDS, RCRA-NonGen, UST, ECSI, VCP
1039	Rexel Taylor Electrical Supply	240 SE Clay Street	ERNS, SPILLS, ECSI
1039	Ingersoll-Rand Equipment Sales	240 SE Clay Street	UST
1450	Taylor Electric Warehouse	1709 SE Third Avenue	FINDS
Not Available	Uncharacterized release, 1/1/1985	SE Third Avenue and Clay Street	OR HAZMAT

Notes:
RCRA = Resource Conservation and Recovery Act of 1976
CESQG = Conditionally exempt small quantity generator
NonGen =Non generator
HSIS = (Oregon) Hazardous Substance Information Survey
ERNS = Federal Emergency Response Notification System
FINDS = USEPA Facility Index System
VCP = (Oregon) Voluntary Cleanup Program
SPILLS = (Oregon) Environmental Response Program
OR HAZMAT = Oregon Hazardous Material Database
MANIFEST = Hazardous waste manifest information

The chemical release that occurred at SE Third Avenue and Clay Street on January 1, 1985 was registered as a HAZMAT response which denotes a Fire Department response as reported by the Oregon State Fire Marshall's Office. No additional information on the chemical or volume spilled was available regarding this chemical release. The lack of more detailed information and specific knowledge of the location and nature of the chemical(s) released represents a data gap.

Rose Equipment & Supply, Inc., at 207 SE Clay Street, was identified in the RCRA database. This property registered as a non-generator of hazardous waste on June 28, 1993 during a RCRA compliance inspection. One transfer, storage, and disposal (TSD) violation pertaining to use and storage of hazardous waste containers was cited during the inspection. Compliance for this violation was achieved August 9, 1993. A USEPA hazardous waste generator ID has been issued to this property (ORD987202280); therefore, Rose Equipment & Supply, Inc. was likely registered as a generator or TSD facility prior to 1993. No additional information was provided in the EDR Report. No other properties were identified in the EDR report with open or closed RCRA violations.

As noted in Section 2.2, three properties appear mostly likely to have potentially contributed to the contamination associated with Outfall 33: the Holman Building, Hawthorne Building, and Rexel Taylor property. These are summarized below, along with the results of the City's 2009 investigation of the Outfall 33 storm drain system. No additional information regarding site investigation activities were available for other properties within the Outfall 33 drainage area.

Block Number 1496 - Holman Building

In October 1997 and August 2004, site investigations evaluated the presence of subsurface soil and groundwater contamination resulting from site activities. During the October 1997 study, contamination was detected in one boring, located in the southwest corner of the building. Phenol was detected in a soil sample collected at 25 feet below ground surface (bgs) at 1,250 micrograms per kilogram (μg/kg). Ethylbenzene and total xylenes were detected in a groundwater sample from the same boring at concentrations of 3.54 micrograms per liter (μg/L) and 17.6 μg/L, respectively (Hart Crowser, 2004; DEQ, 2004).

During the August 2004 investigation, TPH was detected at depths up to 3 feet bgs in the soil of the hydraulic leveler bays at concentrations up to 31,000 milligrams per kilogram (mg/kg). Concentrations of TPH decreased with depth with results of 200 mg/kg detected at 20 feet bgs. No other constituents were detected in the soil or groundwater samples collected during the August 2004 investigation. The approximate locations of the borings from the October 1997 and August 2004 investigation can be found in Figure 5.

Block Number 1020 – Hawthorne Building

The following summarizes the known investigations and remedial activities completed at the Hawthorne property:

- A vent evaluation was conducted by PGE in 1982-1983 for the welding shop in conjunction with the installation of an exhaust fan in the east wall of the Hawthorne shop near the welding area (PGE, 2009).
- Asbestos surveys were conducted by PGE at the Hawthorne Building in 1987, 1996, and 2006 (PGE, 2009). The asbestos surveys identified asbestos at various locations in the building and made recommendations including proper labeling of asbestos-containing material (ACM) and the need to use approved abatement methods.
- A lead-based paint survey was conducted by PGE in Fall 1997 (PGE, 2009). The survey identified the presence of lead-based paint in the Hawthorne Building, but did not quantify the concentrations.
- In 1993, the basement sumps and catch basins were cleaned out and ten 55-gallon drums of sludge and waste water were removed (PGE, 2009). A PGE program for sump and catch basin bi-annual testing was started in 1995-1996. For the last seven years, Test America has performed the sampling and testing of the catch basin water. To the best of PGE's knowledge, after reasonable inquiry, PGE has not been able to locate copies of analytical data from 1994 through 2002. (PGE, 2009).
- A Phase I ESA was completed at the Hawthorne property by Hahn and Associates, Inc. in 2006 in preparation for the possible PGE purchase of the eastern parcel. Based on the results of the Phase I ESA, a Phase II ESA was conducted by Hahn & Associates Inc in 2007. The Phase II ESA focused on the eastern parcel and assessed the potential impacts to soil and groundwater. The Phase II ESA identified the oil-range petroleum hydrocarbons, PCBs, PAHs, and metals (PGE, 2009). Figure 5 provides the approximate locations of the Phase II ESA sampling locations.
    - Catch basin solids: TPH (oil-range) was detected at 4,170 mg/kg, PCBs were detected at 0.15 mg/kg, and lead was detected at 302 mg/kg.
    - Soil: TPH (oil-range) was detected in 13 of 19 samples with concentrations up to 4,437 mg/kg in near-surface soil samples and decreasing with depth. PCBs were not detected above method reporting limits. PAHs were detected in two near-surface soil samples. Arsenic, lead, and mercury were detected in composite soil samples at maximum concentrations of 7.91 mg/kg, 1,940 mg/kg, and 5.38 mg/kg, respectively.
    - Groundwater: Benzene and naphthalene were detected in one groundwater sample collected in the southernmost boring at concentrations of 6 ug/L and 16.2 ug/L, respectively.

The Phase II ESA concluded that although there were elevated levels of contaminants in the soil and groundwater beneath the eastern parcel, there is no unacceptable human health risk because there is no complete pathway for human exposure. Human exposure pathways are incomplete

because the surface is paved/covered and the groundwater is unlikely to be used for drinking water.

The Phase II ESA recommended that the catch basin solids at the property should be further tested, classified, removed, and appropriately disposed of. In June 2009, TestAmerica tested the solids and water in Sump A (large sump with pump) and Sump B (smaller sump east of Sump A) located in the basement. The approximate locations of the two sumps are shown in Figure 5. Analysis of these four samples detected diesel-range and heavy oil-range petroleum hydrocarbons (per the NWTPH-Dx Method), cadmium, chromium, lead, PCBs (as Aroclor 1260), and toluene.

- Diesel-range organics were detected in the Sump A and Sump B solids samples at concentrations 1,300 mg/kg to 7,480 mg/kg, respectively and in the Sump A and Sump B water at concentrations of 0.404 mg/L and 13.6 mg/L, respectively.
- Heavy oil-range petroleum hydrocarbons were detected in the Sump A and Sump B solids samples at concentration of 4,760 mg/kg and 3,720 mg/kg, respectively, and were detected in the Sump B water at a concentration of 1.37 mg/L.
- Cadmium was detected in the Sump B solids at a concentration of 5.70 mg/kg.
- Chromium was detected in the Sump A and Sump B solids at concentrations of 30.6 mg/kg and 179 mg/kg, respectively, and in the Sump B water at a concentration of 0.0274 mg/L.
- Lead was detected in the Sump A and Sump B solids at concentrations of 182 mg/kg and 254 mg/kg and in the Sump A water at a concentration of 0.0749 mg/L.
- PCB Aroclor 1260 was detected in the Sump A and Sump B solids at concentrations of 3.57 mg/kg and 7.43 mg/kg, respectively, and in the Sump B water at a concentration of 3.54 ug/L. Toluene was detected in the Sump B solids at a concentration of 5.44 mg/kg.

In July 2009, TestAmerica tested the solids and water in three external catch basins: the pair of catch basins east of the loading ramp, CB1 and CB2, and the catch basin in the vehicle bay north of the loading ramp, CB3. The locations of the three catch basins are shown in Figure 5. A qualitative analysis of these three samples indicated that gasoline-range petroleum hydrocarbons were detected in two of the three catch basins, and diesel-range and heavy oil-range petroleum hydrocarbons were detected in all three catch basins. Analyzed by Toxicity Characteristic Leaching Procedure (TCLP) Method, cadmium was detected in CB1 and CB2 at concentrations of 0.0119 mg/L and 0.0150 mg/L, respectively, and lead was detected in CB1, CB2, and CB3 at concentrations of 0.0724 mg/L, 0.256 mg/L, and 0.712 mg/L, respectively. PCB Aroclor 1260 was detected in all three catch basins at concentrations of 0.354 mg/kg, 0.411 mg/kg, and 1.32 mg/kg, respectively.

In July 2009, NRC Environmental Services pumped and cleaned out catch basins CB2, CB3, the stormwater catch basin at the vehicle entrance to the basement, and all of the catch basins and

sumps within the Hawthorne Building. Approximately 400 gallons of water and one drum of sludge were removed. The sump/catch basin slurry, which contained PCBs at concentrations less than 10 mg/L, was pumped out and disposed of at Pacific Power Vac's permitted water treatment system in Portland, Oregon. The remaining sump/catch basin solids were manually removed, placed in a waste containment barrel, and sent to PSC for batch disposal. The solid waste was likely disposed of at the Columbia Ridge Landfill or Hillsboro Landfill.

Previous clean-out events were conducted in conjunction with catch basins cleaning events at multiple PGE properties. Available disposal manifests are included in the CERCLA 104(e) response for the Hawthorne Building, but these manifests only list total quantities of solids and liquids collected from up to a dozen different properties. Quantities of catch basin and sump wastes removed from individual properties were not documented.

Additional information regarding the Hawthorne property can be found in the PGE response to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Section 104(e) response (PGE, 2009).

Spills

In 1986, approximately one quart of dielectric fluid with a PCB concentration of 146 mg/L spilled from a transformer stored in a storage area within the Hawthorne Building. The spill was reported to the State of Oregon Emergency Management Division and was determined to be not a reportable quantity. The spill was reported to the PGE System Control Center, contained, and cleaned up (including the removal and disposal of absorbents). The petroleum hydrocarbon- and PCB-contaminated absorbent was likely disposed of at the Arlington Landfill.

In 1993, approximately 3 gallons of water-soluble oil from the lift pump were spilled inside the building and some drained into the sump. The spill was reported to the PGE System Control Center, contained, and cleaned up, including the removal and disposal of absorbents. The petroleum hydrocarbon-contaminated absorbent was disposed of in the on-site trash dumpster.

In 2004, approximately 2 gallons of hydraulic oil were spilled from a reel truck trailer onto the asphalt in the yard. The spill was reported to the PGE System Control Center, contained, and cleaned up, including the removal and disposal of one 55-gallon barrel of absorbent and cleaner. The barrel was disposed of at Hillsboro Landfill in a bulk shipment of PCB waste (containing less than 20 mg/kg).

In 2006, equipment located in the museum on the second floor was discovered to be leaking oil. Wipe tests of the affected surfaces were analyzed but PCBs were not detected. The leaking equipment was removed from the property by PGE's EM&C department.

Block Number 1039 – Rexel Taylor Property

During the July 2008 study of the Rexel Taylor property, discrete soil samples were collected from nine soil borings and samples of stormwater system solids were collected from three drains. Figure 5 displays the soil boring and stormwater system investigation locations. No PCBs were

detected in any subfloor soil samples. PCBs as Aroclor 1016 were detected at a concentration of 0.7 mg/kg at 1.5 feet bgs in SB-1, which was located approximately 6 feet west of the transformer pole. Analysis of a deeper sample from 3 feet bgs did not detect PCBs. PCBs as Aroclor 1254 were also detected at a concentration of 0.3 mg/kg in a composite stormwater system solids sample collected from the two drain inlets on SE Clay Street and Second Avenue (CB-3). PCBs were undetected in all of the other soil and catch basin samples, at a detection limit of 0.1 mg/kg. TPH was detected at concentrations of 290 mg/kg (diesel-range) and 1,280 mg/kg (heavy oil-range) at 1.5 feet bgs in SB-2, which was located approximately 30 feet west of the transformer pole. TPH was undetected in all other samples; BTEX and PAHs were undetected in all samples that were analyzed (WorleyParsons Komex, 2008b).

Analysis of residual oil from the burned pole-mounted transformers indicated that the oil contained total PCB concentrations of 32.9 mg/kg and 44.1 mg/kg. Wipe analysis indicated that the PCB composition was Aroclor 1242 at 6.66 ug/sample and Aroclor 1260 at 12.6 ug/sample (PGE, 2006). This information is included in the Transformer Oil Release Report provided in Appendix E.

URS conducted a site visit on May 26, 2009 that consisted of walking the perimeter of the Rexel Taylor property and documenting exposed soils, oil-stained surfaces, and burned debris that could be readily identified within the ruined building. Due to the site security fence and access issues, no additional inspection was made of the interior of the warehouse. Observations made during the site visit were documented in the photographic log (Appendix F). URS observed oil stains on the building floor and charring on the majority of the walls. Oil stains were not observed near the remains of the pole that held the three PGE-owned transformers.

City of Portland Stormwater System

In the fall of 2009, the City conducted an investigation of the stormwater system that discharges to Outfall 33. This investigation included the compilation of available historical information regarding the construction and maintenance of the stormwater system, the collection and analysis of in-line stormwater solids samples, and a video survey of the section of the pipe from manhole ABU929 (adjacent to the Hawthorne Building) to approximately the top of the riverbank. The results of this investigation were made available to PGE and are included in Appendix G.

In a letter to DEQ dated March 23, 2010 (COP, 2010), Rod Struck of the Bureau of Environmental Services (BES) explains:

> "Research conducted by the City (see Attachment 1 [Appendix G]) indicates that the end of the outfall pipe is buried beneath fill placed on the river bank. The outfall was constructed in 1895 of 12" diameter pipe and discharged at the river bank below the mean low water level. The main stormwater conveyance line, west of SE Water Avenue, was replaced and extended approximately 310 feet riverward in 1918 due to the placement of fill in this area and discharged at a similar elevation at the river's edge. In

> 1948, the pipe was observed to project approximately 10 feet into the river. In 1955, the end of the outfall was observed to be covered by fill placed at the end of the street. In September 2009, the City discharged potable water into the system (manhole ABU229 [sic]) to determine where OF 33 discharged to the river. Water was observed discharging from the river bank 5 to10 feet south of outfalls WR-541 (~10" diameter steel pipe) and MR-564 (~36" diameter corrugated steel pipe) (see Attachment 2 [Appendix G]). The end of the pipe for OF 33 has not been located."
>
> Mr. Struck later clarified that the potable water was discharged to manhole ABU 929 (not ABU229).

In response to a follow-up information request, the City provided information regarding the maintenance history of selected sections of the stormwater system. Provided in Appendix G, this information documents that sections of the line were cleaned in 2004 in preparation for a camera survey. More recently, following the 2006 fire at the Rexel Taylor Property, the City cleaned the line from MH ABU888 to the top of the bank (approximately where the pipe was extended in 1918). A composite sample of the solids removed from the pipe was analyzed and found to contain 0.510 mg/kg PCBs as Aroclor 1260, 544 mg/kg lead, 637 mg/kg zinc, 3.0 mg/kg total PAHs (including 1- and 2-methylnaphthalene), and 3,420 mg/kg motor oil (Appendix G). Neither of the lines along SE Second Avenue were cleaned in 2006.

During field events in June and November 2009, the City's contractors inspected and sampled 15 catch basins and manholes in the Outfall 33 storm drain system (see Figure 5 and the City-provided figure in Appendix G). Sufficient stormwater system solids were available to allow sample collection from 12 locations. The City's figure (Appendix G) shows the analytical results for Aroclor 1254, Aroclor 1260, and bis(2-ethylhexyl) phthalate (BEHP) from these sampling efforts.

At the catch basin closest to the location where PGE's transformers burned in the Rexel Taylor fire (AEE077), Aroclors 1254 and 1260 were detected at concentrations of 0.046 and 0.059 mg/kg, respectively. This finding is consistent with the July 2008 sampling results at this location which did not detect PCBs at a detection limit of 0.100 mg/kg (WorleyParsons Komex, 2008b). The 2009 investigation also resampled catch basin ANY616 and did not detect PCBs at a detection limit of 0.010 mg/kg, a finding that is consistent with the 2006 results. PCBs were also undetected (detection limit of 0.010 mg/kg) in the sample from manhole ABU893, located immediately downstream of both catch basins AEE077 and ANY616 (Appendix G). Two other samples adjacent to the Rexel Taylor property, ABU888 and AEE063, also had PCBs at concentrations of 0.055 and 0.033 mg/kg, respectively. These findings suggest that stormwater runoff from the vicinity of the Rexel Taylor property is a potential current source of PCBs to the City's Outfall 33 stormwater drainage system.

During the 2009 investigation, PCBs were not detected in the solids samples collected immediately upstream (ABU882) and downstream (ABU881) of the lateral lines conveying

stormwater runoff from the parking lot at the Hawthorne Building (Appendix G). No other lateral lines connect the Hawthorne Building to the stormwater drainage system. This evidence indicates that there is no current source of PCBs to the City stormwater system from the Hawthorne Building. Although PCBs have been detected at catch basin AEE055 (0.054 mg/kg), which collects surface water runoff at the intersection of Clay Street and Water Avenue, there are no current discharges from the Hawthorne Building property to this catch basin.

Adjacent to the Holman Building, PCB concentrations in the 2009 sample from manhole ABU 929 were three orders of magnitude higher (58 mg/kg) than at any other location within the Outfall 33 drainage system. The City maps show multiple potential laterals from the Holman Building to the stormwater system immediately upstream of this manhole (Appendix G). Since this section of the stormwater system was cleaned in 2006 following the Rexel Taylor fire, the high concentration of PCBs observed in 2009 indicates that there is a recent (or ongoing) source of PCBs somewhere within the short section of pipe between manhole ABU881 and ABU929 (Figure 5). It is possible that this source may have been discharging PCBs to the stormwater line for many years. The nature and identity of the PCB source are unknown. PGE is not aware of any additional data characterizing current or historical discharges from the Holman Building.

The City also supplied a draft table (Appendix G) which summarizes all the results of the 2009 sampling event and screened them against the Portland Harbor Joint Source Control Strategy (JSCS) screening level values (SLVs). In addition to PCBs, copper, cadmium, lead, mercury, zinc, BEHP, and a few PAHs exceed the SLVs (Appendix G) in one or more of the stormwater system solids samples.

Field notes and photographs taken during the sampling activities document the scarcity of solids that have accumulated in the system in the three years since the 2006 cleaning event. URS assembled representative photographs (taken by the City's contractor during the sampling event) from each station and incorporated them into the field notes included in Appendix G. The City also conducted a video survey of the line downstream from manhole ABU929. A summary of the survey is included in Appendix G, along with a copy of the video. The survey extended a total of 367.5 feet downgradient from the manhole, at which point the remote camera was unable to bypass a 1.5-inch offset in the pipe. Immediately ahead of this obstruction, the survey noted that the pipe changed from clay to cement and began sloping more steeply downward. This intersection is interpreted as the location of the 1918 pipe extension. The remaining approximately 310 feet of pipe were not surveyed, so conditions at the subsurface discharge point for City Outfall 33 are unknown.

The discovery that the Outfall 33 discharge point is buried beneath the riverbank and that water discharges to the subsurface has significant implications for the potential for stormwater solids to impact Willamette River sediments. Unlike most outfalls, solids discharged from the pipe probably do not enter the surface water and settle on top of preexisting sediment. Instead, stormwater solids are discharged to the subsurface within the riverbank and likely have limited ability to be transported downstream. Depending on the conditions at the end of the pipe,

sediment transported through the pipe (including solids washed into the stormwater system during the 2006 fire at the Rexel Taylor property) may be accumulating within the pipe itself and may not be transported to the river sediments.

3.0 SOURCE AREAS AND WASTE CHARACTERISTICS

This section summarizes the available information regarding documented releases, threat of release, and storage and disposal of hazardous substances for properties within the Outfall 33 drainage area. Section 2.2 provided a summary from both the EDR Report and DEQ records of known or potential environmental contamination concerns at each site. Section 2.3 provided a review of the EDR Report and a summary of site investigative activities and available analytical data. According to the EDR Report, there are no Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), RCRA LQG or SQG sites within the Outfall 33 drainage area (EDR, 2009).

Sites were registered or identified in several databases or state and federal programs within the Outfall 33 drainage area. The following provides a description of these databases and programs:

- RCRA-registered sites generate, transport, store, treat and/or dispose of hazardous waste as defined by RCRA. Sites registered as CESQG generate less than 100 kg of hazardous waste or less than 1 kg of acutely hazardous waste per month. Sites registered as NonGen do not presently generate hazardous waste.
- The ERNS federal database records and stores information on reported releases of oil and hazardous substances.
- The DEQ LUST program handles issues related to the cleanup of soil and groundwater contamination from spills and releases from regulated USTs, contractors working on cleanup of soil and groundwater contamination at LUST sites, and enforcement of state and federal LUST rules. The DEQ UST program handles issues related to tank registration and operating certificates, installation, operation and removal of USTs, cleanup of soil and groundwater contamination from petroleum leaks, and enforcement of state and federal UST rules. While the LUST and UST programs chiefly monitor petroleum containing tanks, the data available for review does not indicate if any tanks on the referenced sites contain hazardous substances.
- The HSIS database is a survey conducted through the Oregon Emergency Planning and Response Section and is part of the Oregon Community Right to Know and Protection Act of 1985 (ORS 453.307 through 453.414).
- The DEQ ECSI database identifies sites with a potential hazardous substance release.

A summary of all available information regarding hazardous waste sources, storage, disposal and treatment activities within the Outfall 33 drainage area is provided below. The EDR database report is included in Appendix C. A copy of the reports from the DEQ Facility Profiler website is included in Appendix D.

Block Number 1019

The LUST entry for Union Pacific Railroad – Portland Traction Company, located at 1640 SE Water Avenue, indicated the decommissioning of one tank, under UST ID 8313. This entry (LUST Log Number/Facility ID 26-90-0438) indicated that cleanup at this site was completed February 29, 1992; the DEQ Profiler Report indicates complete cleanup on March 5, 1992 (Appendix D).

Block Number 1021

Auto Adventure, Inc. located at 125 SE Clay Street and operated by Speeds Auto Service Group, is a CEG of hazardous waste from November 1991 through the present. An operation end date was not provided. The character or designation of the hazardous substance is not known.

Block Number 1022

Speeds Auto Service Group Inc, located at 120 SE Clay Street, has been a CESQG of hazardous waste since April 1992. An operation end date was not provided. The character or designation of the hazardous substance is not known. A UST entry indicated the decommissioning of two tanks under UST ID 5349. An additional LUST entry (LUST Log Number/Facility ID 26-97-0486) indicates cleanup at this site was completed November 18, 1999, slightly earlier than the date of January 12, 2000 indicated in the DEQ Profiler Report (Appendix D).

Block Number 1040

The LUST entry for Rose Equipment & Supply Inc., located at 201 SE Clay Street (LUST Log Number/Facility ID 26-95-0342), indicates cleanup at this site was completed February 21, 1996 (DEQ, 2009b). Rose Equipment & Supply, located at 207 SE Clay Street, does not presently generate hazardous waste.

Block Number 1496 - Holman Building

Rose City Rowing Club, located at 1515 SE Water Avenue, had an HSIS entry (Facility ID 098229) for gasoline stored in a plastic or non-metallic drum. This entry is assumed to be for a small amount (i.e., less than 50 gallons) of gasoline stored on site.

The ODOT Holman Transfer Building, located at 49 SE Clay Street, does not presently generate hazardous waste. A UST entry indicated the decommissioning of one tank under UST ID 7736. No other information was provided; however, this entry may coincide with the UST decommissioning that occurred at the site in May 1993 (DEQ, 2009b). An additional entry indicated the site was entered into the ECSI database (ECSI Number 4236) for hydraulic and heavy oil petroleum contamination associated with the eight hydraulic levelers in the loading dock (Hart Crowser, 2004).

Although no specific potential source has been identified at the Holman Building, the 2009 sampling of stormwater system solids in the Outfall 33 pipe found 58 mg/kg PCBs as Aroclor 1260 at manhole ABU929, located immediately downstream of the lateral pipes from the Holman Building (Appendix G). PCBs were not detected at manhole ABU881, upstream of the Holman Building and downstream of both the Hawthorne Building and the Rexel Taylor property. Since the City cleaned this line in 2006, these stormwater system solids were probably deposited after 2006 indicating the presence of a recent or ongoing source. This source may have been discharging PCBs to the stormwater line prior to 2006, potentially for many years. PGE is not aware of any additional data characterizing current or historical discharges from the Holman Building.

Block Number 1020 – Hawthorne Building

A variety of hazardous and non-hazardous wastes have been in use at the PGE Hawthorne Building, located at 1510 SE Water Avenue. Contaminants that have potentially been released at the site or into the City stormwater system include hydraulic oil and other oils, some containing PCBs, dielectric fluids, as well as other potentially PCB-contaminated and/or hazardous materials.

The PGE Hawthorne Building has been a CESQG of hazardous waste since approximately 1994. An operation end date was not provided. The DEQ Profiler data provide additional information on the designation and waste codes of the hazardous substance (DEQ, 2009b). The PGE Hawthorne Building operated initially as a SQG of hazardous waste (waste codes: D001, D002, D006 through D008, D018, D039, F001, and F003) from August 1991 through November 1992 and as a LQG of hazardous waste (waste codes: D001, D004, D005, D007, D008, D018, and D039) in 1993.

Waste and materials have been handled at the Hawthorne Building in conjunction with various activities and operations, construction projects, and spills. The types and quantities of wastes and materials handled at the Hawthorne property during PGE's ownership are summarized in PGE's 104e submittal (PGE, 2009) and are provided below. There is limited knowledge of the material and waste handling at the Hawthorne property prior to the 1980s.

<u>Materials – Current (2006 to present), Recent (1990 to 2005), and Historical (pre-1990)</u> The primary materials currently used for operations/activities at the Hawthorne Building and stored on site include solvents, acetylene, acetone, sulfur hexafluoride gas, nitrogen gas, ammonium hydroxide, sodium hydroxide, cleaning supplies, gasoline, degreasers, paints, scaling agents for the HVAC system, Forney fire extinguisher powder, various oils, transformer oil, and hydraulic fluid. Products used in the past are similar to those used currently, but other products including brake fluid and antifreeze were also used. As a CESQG, PGE maintains small quantities of these materials on site. The only exception would be for fire extinguisher powder, which is stocked in large amounts to refill fire extinguishers. Materials are stored in specific storage areas at the Hawthorne Building when not in use.

Oil-Filled Equipment – Current (2006 to present): Transformers (containing oil with less than 1 mg/L PCBs) and surplus (used) transformers (containing oil with less than 50 mg/L PCBs) are currently stored at the Hawthorne Building, primarily in the basement on pallets and in the parking lot.

Oil-Filled Equipment – Recent (1990 to 2005): A vault transformer was installed in the concrete vault (located under the parking lot along the southern property boundary) in 2000. This transformer was likely removed by 2006 since it was not included in the 2006 Phase I ESA potential PCB inventory (PGR, 2009).

Oil-Filled Equipment – Historical (pre-1990): Numerous oil-filled transformers were historically stored and repaired at the property. In addition, transformers were historically operated at the facility. From 1972 to 1978, six 1-phase transformers (1,000 kVA) were in operation at the property. These transformers likely contained PCBs and were likely located in the underground concrete vault, which is located under the parking lot along the southern property boundary. These transformers were used to supply power to the Hawthorne Building and may have also distributed power to other adjacent properties.

Wastes – Current (2006-present), Recent (1990 to 2005): The wastes generated from current operations and activities at the Hawthorne Building include underground transmission cables; oil-filled potheads; aerosol cans from paints, solvents, and cleaners; aerosol can drainings from paints, solvents, and cleaners; sump/catch basin water; sump/catch basin sludge; mercury; light bulbs: lamp ballasts; batteries; transformer oil; hydraulic fluid; and various oil/gasoline. Wastes generated in the past are similar to those generated currently, but also included other waste streams including oil filters, bead blast, non-aerosol can solvents, asbestos, sodium hydroxide, and antifreeze. Prior to 2001, solvents were placed in waste containers and disposed of approximately every two months, averaging 25 gallons per disposal. Since 2001, solvents are stored in aerosol cans and the quantities vary. Mercury-containing lamp ballasts are placed in containers and disposed of as needed. A total of 150 pounds of ballasts were disposed of in 2002 and 1 pound of ballasts was disposed of in 2006. A total of 148 pounds of drained oil filters were disposed of in 1994 and 1997. Approximately 300 pounds of bead blast were disposed of in 1996 and approximately 370 pounds were disposed of in 1997. One cubic yard of ACM in the form of a sheet of veneer was disposed of in 1992. Approximately 275 gallons of sodium hydroxide were disposed of in 1990. Approximately 10 gallons of gasoline/oil/solvent mixture were disposed of in 2002.

After a sump pump failure in 1993, the main basement sump was emptied so that it could be repaired. Ten 55-gallon drums of sump sludge and water were removed from the sump by NWFS and tested to determine proper disposal methods. A composite sample of sludge solids was analyzed and found to contain 10 mg/kg arsenic, 410 mg/kg barium, 58,000 mg/kg chromium, 20,000 mg/kg lead, 1,200 mg/kg mercury, 130 mg/kg silver, 2,300 mg/kg 1,1-dichloroethane, 7,000 mg/kg 1,1,1-trichloroethane, 66 mg/kg PCBs as Aroclor 1242, and 120 mg/kg PCBs as Aroclor 1260 . A composite water sample was analyzed and found to contain

0.224 mg/L barium, 0.0204 mg/L chromium, 200 ug/L 1,1-dichloroethane, and 4.7 ug/L total PCBs. Following the disposal of the sump sludge and water in 1993, catch basin water has been tested approximately biannually, and excess sludge and water has been removed and disposed of as needed. For the last seven years, TestAmerica has performed the sampling and testing of the catch basin water and the results can be found in the PGE response to the CERCLA 104(e) request (PGE, 2009).

Wastes – Historical (pre-1990): A summary of pre-1990 waste disposal activities follows:

- PCB-containing oil (117 mg/L) – Approximately 6,075 gallons were disposed of in 1985.
- ACM – One barrel was disposed of in 1987.
- Corrosive liquid – Approximately 59 gallons were disposed of in 1987.
- Mixture of gasoline/oil/solvents – Approximately 498 gallons were disposed of in 1987.
- Sodium hydroxide – Approximately 75 pounds were disposed of in 1987.
- Mixture of oil/paint/thinner/hydraulic fluid was disposed of in 1988.
- Petroleum naphtha – Approximately 1,640 gallons were disposed of in 1988 to 1989.

Waste Handling/Transport: The majority of waste and used material was historically and is currently transferred directly to the disposal facility by PGE or the contractor/vendor. The following waste disposal carriers and receivers have transported and/or received wastes (hazardous, non-hazardous, and general refuse) and used materials from the Hawthorne property:

- Advanced Environmental Technical Services – Transported waste cadmium, lead, and chrome in 1996.
- AGG Enterprises – Pick up/transport of solid waste (primarily general office waste) and office recycling to various Waste Management landfills.
- Butte Landfill – Received ACM in 1992.
- Calbag Metals – Pick up, transport, and receipt of scrap metals including copper wiring, aluminum, and lead, as well as empty non-ferrous aerosol cans.
- Chemical Waste Management of the Northwest (Arlington Landfill) – Receives waste cadmium, lead, chrome and waste flammable liquids (gas, oil, paint and solvents) and also received waste with PCB concentrations greater than 50 mg/kg or 50 mg/L.
- Circle C Landfill – Received ACM in 1987.
- Columbia Ridge Landfill - Receives waste with PCB concentrations less than 50 mg/kg or 50 mg/L.
- Crosby and Overton - Received waste sodium hydroxide and corrosive liquids in 1987.

- Diablo Transportation - Transported waste cadmium, lead and chrome in 1996.
- EPSI - Transported and received wastes such as batteries, mercury, fluorescent light bulbs and used electronic equipment.
- General Electric – Likely received obsolete electrical equipment (e.g., transformers).
- Hillsboro Landfill - Received wastes with PCB concentrations less than 20 mg/kg or 20 mg/L.
- NWFS – Removed and transported sump water/sludge in 1993.
- NRC Environmental Services – Removed and transported sump water/sludge in 2009.
- Oak Harbor Freight Lines, Inc. – Transported flammable liquids, waste corrosive liquid, and waste sodium hydroxides.
- Pacific Power Vac – Received waste sump water in 2009.
- Riverbend Landfill – Received waste sump water and sludge from at least 1997 to 2008.
- Safety Kleen – Transported and received various cleaning solvents and oils.
- Schnitzer Steel – Pick up/transport and recycles scrap steel and empty ferrous aerosol cans.
- Spencer Environmental – Transport gasoline, oil, paint, and solvent mixture in 2002.
- Sol-Pro/Lily Bad Ltd – Received flammable liquids (hydraulic oil, thinners and motor oil), sodium hydroxide, and paints in the late 1980s.
- Savannah Transportation – Transported waste mercury in 2006.
- Thermo Fluids – Pick up/transport and receive used hydraulic fluids and other oils.
- U.S. Pollution Control Inc – Transported solid PCB waste in 1985.
- Union Electric Company – Received solid PCB waste in 1985.
- Veolia Environmental Services – Pick up/transport waste mercury and aerosol can drainings.
- Waste Management Inc – Received waste sump water/sludge containing PCB concentrations < 20 mg/L.
- Water Truck Services Inc – Removed and transported water/sludge material from the sumps and associated catch basins.

Additional information, including the complete list of products/materials currently used at the Hawthorne property, manifests, and other available records can be found in the PGE response to the CERCLA 104(e) request (PGE, 2009).

Block Number 1039 – Rexel Taylor Property

Ingersoll-Rand Equipment Sales, which occupied the Rexel Taylor Warehouse at 240 SE Clay Street from 1970 to 1991, indicated one tank was decommissioned under UST ID 5990. The contents of the UST are unknown. No other information was provided regarding this event.

The Rexel Taylor property had entries for ERNS and ECSI (ECSI Number 4632). Both of these entries are a result of the Rexel Taylor fire that occurred at the property on May 17, 2006 which presumably consumed oil and potential hazardous substance-containing heavy equipment present in the warehouse and three PCB-containing, pole-mounted transformers. It was estimated that there was a release of less than 10 gallons of oil from the transformers, with the balance of 110 gallons presumed to have been consumed in the fire.

4.0 PATHWAYS OF EXPOSURE

This section considers the completeness of potential pathways between human or ecological receptors and contamination within or from the Outfall 33 drainage area that may be transported to Willamette River sediments. This PA is specifically limited to assessing potential current and historical contributions to potential risk associate with to sediments in the vicinity of Outfall 33, so potentially complete pathways to upland receptors are not discussed. The pathways considered are groundwater, surface water, air, and direct contact.

4.1 Groundwater Pathway

4.1.1 Hydrogeologic Setting

The Outfall 33 drainage area is located in the Willamette Basin, a 12,000-square mile topographic and structural trough that lies between the Coast Range and the Cascade Range. The basin is divided into five sub-basins that are separated by local uplands of the Columbia River Basalt Group lavas (USGS, 2005). The Outfall 33 drainage area is located in the Portland Basin, the northernmost of the five sub-basins within the Willamette Basin. This basin is a northwest-southeast trending, sediment-filled, 1,300-square mile depression bounded by the Tualatin Mountains (Portland Hills) on the west, and the Cascade Range on the east, north, and south.

Seven regional hydrogeologic units with similar regional hydrogeologic properties are defined in the Willamette Basin. Six of these seven hydrogeological units are present within the Outfall 33 drainage area. The uppermost hydrogeologic unit, the upper sedimentary unit, is a highly permeable unit comprised of coarse-grained Missoula Flood deposits and late Pleistocene and Holocene alluvium (USGS, 2005).

Underlying the upper sedimentary unit are the middle and lower sedimentary units. The middle sedimentary unit in the Portland Basin, also known as the Troutdale gravel aquifer, is composed of consolidated gravels of the upper Troutdale Formation and younger volcaniclastic conglomerates derived from the Cascade Range of Pliocene to early Pleistocene age. The lower sedimentary unit in the Portland Basin contains the Sandy River Mudstone and Troutdale Formation sands and gravels. In the Outfall 33 drainage area, the fine-grained deposits of the Sandy River Mudstone are expected to be interbedded with coarse-grained Columbia River channel deposits. Beneath all three sedimentary units are Miocene flows of Columbia River basalt (Wanapum flows) which contain multiple productive water-bearing zones, and the basement confinement unit created of older marine and volcanic rocks with low permeability (USGS, 2005).

The approximate drainage area for City Outfall 33 extends approximately 1,300 feet east of the Willamette River. No other natural surface water bodies are located within a 2-mile radius of the site. Regional groundwater beneath the Outfall 33 drainage area is likely present at a depth of

approximately 40 feet bgs, however, isolated perched groundwater may be present at shallower depths (WorleyParsons Komex, 2008a). The depth to seasonal high groundwater in the Outfall 33 drainage area is less than 20 feet bgs up to 40 feet bgs (COP, 2009).

Borings completed within the Outfall 33 drainage area (Appendix H) were completed within either fill or the upper sedimentary unit. More specifically:

- Subsurface geology at the ODOT Holman property consists of about 4 feet of silty sand overlying slightly gravelly to gravelly sand to about 22 feet bgs, with the percentage of gravel generally increasing with depth. Below 22 feet bgs, soils consist of sand, gravelly sand, and silty sand. Groundwater was present at about 26 to 27 feet bgs in August 2004 (Hart Crowser, 2004).
- Subsurface geology at the PGE Hawthorne property consists of gravelly silts to depths of 3 to 5 feet bgs, underlain by loose fine to medium grain sands and gravelly sands to a depth of 15 to 16 feet bgs. These soils are likely fill. Below 16 feet bgs, soils consist of silty sand that could be native or fill. Groundwater at the site was encountered at depths of approximately 11 feet bgs in October 2007 (Hahn and Associates, 2007).
- Subsurface geology of the Rexel Taylor property is clayey fine to coarse grained sand. The south and west ends of the site is sandy gravelly clay from 2 to 14 feet bgs. The soil boreholes were installed to depths up to 15 feet bgs and groundwater was not encountered in any location.

Net annual precipitation was calculated as the difference between total precipitation and evapotranspiration using data available from the U.S. Bureau of Land Management's Pacific Northwest Cooperative Agricultural Weather Network (AgriMet, 2009). Focused on agricultural areas, only two stations are in the rough vicinity of the Outfall 33 drainage area: Forest Grove (station ID FOGO), located about 28 miles west, and Aurora (station ID ARAO), located about 22 miles south. Net annual precipitation was calculated for these two stations using summed monthly differences of complete, daily evapotranspiration and precipitation data from 1999 to 2008. If monthly net precipitation was zero, zero was entered for that month's total. Years with incomplete data were not included (i.e., FOGO data from 2004 and 2008, and ARAO data from 2002 were excluded).

- Eight years of data from the Forest Grove station FOGO indicated an average annual net precipitation of 29.03 inches.
- Nine years of data from the Aurora station ARAO indicated an average annual net precipitation of 24.25 inches.
- Based on this information, the likely annual net precipitation for the Outfall 33 drainage area is between 24.25 and 29.03 inches.

4.1.2 Groundwater Pathway Targets

The Outfall 33 drainage area is served by municipal water from the City. The primary source of Portland's potable water is surface water from the Bull Run watershed, located approximately 26 miles east of Portland. The Bull Run watershed collects rainfall over 102-square miles, mostly within Mt. Hood National Forest. The supplemental and emergency City water source is groundwater from the Columbia South Shore Well Field (CSSWF), located several miles northeast of downtown Portland near Gresham, Oregon. A total of 25 wells in the CSSWF draw water from four aquifers over 11 square miles. The Outfall 33 drainage area is outside the protected areas for both water supplies.

URS conducted a water well search using the WRD's Well Log Query system (WRD, 2009a). Monitoring and geotechnical wells were not considered. The Outfall 33 drainage area is located in the southeast quarter of Willamette Meridian Section 3, Township 1 South, Range 1 East. A search of the Well Log Query system was performed for logged water wells in the following nine-section area:

- Township 1 South, Range 1 East, Sections 2, 3, 4, 9, 10, and 11.
- Township 1 North, Range 1 East, Sections 33, 34, and 35

This search found 366 water well logs. After reviewing the well log section locations and addresses, 320 of the 366 water well logs were found to be located on the west side of the Willamette River, where there is no hydrological connection to groundwater beneath the Outfall 33 drainage area. The remaining 46 water well logs on the east side of the Willamette River were further considered.

Further review of the 46 well logs indicated that none of the wells were designated for drinking water use. A total of 21 well logs were unlikely to represent groundwater use and were removed from further consideration. These included:

- Four wells with abandonment logs
- Four monitoring or test wells (incorrectly designated as water wells)
- Six cathodic protection wells (incorrectly designated as water wells)
- Four thermal/injection wells
- Three dewatering wells

Of the remaining 25 wells, one well is listed as irrigation use, 21 wells are listed as industrial use, and three wells are listed as "other use." Summary information and well logs for these 25 water wells are included in Appendix H. Of the 21 industrial wells, four were installed in the early 1900s for NW Ice and Cold Storage Company. The well logs do not indicate if NW Ice and Cold Storage Company use or used the wells for ice production.

Of the 25 wells, only one well (MULT 0004) was located within the Outfall 33 drainage area. Owned by Harold Coe (i.e., COE Properties LLC), the address for this industrial water well is

120 SE Clay Street, Block 1022. Based on the well's address, the well log erroneously lists this well as being located in Section 2 when it is actually located in Section 3. The well was installed in 1990 to a total depth of 60 feet bgs. No screen depth is indicated on the well log.

With the exception of one industrial well completed to 40 feet bgs (MULT 2780) and one "other use" well completed to 90 feet bgs (MULT 1088), the remaining 22 water wells were completed to depths greater than 100 feet bgs.

Due to the industrial nature of the area, the presence of a municipal water supply, and the completion depths of the wells, it is unlikely that the groundwater potentially affected by properties within the Outfall 33 drainage area is presently in use. In addition, the Study Area is not located in a wellhead protection area (COP, 2009).

4.1.3 Groundwater Conclusions

The groundwater pathway is a potentially complete. Contaminants released within the Outfall 33 drainage area could reach human and ecological receptors within the Willamette River via the following transport routes:

- *Discharge to Surface Water*: Dissolved contaminants potentially present in groundwater may be transported to and discharged to surface water through seeps and springs.
- *Horizontal Transport:* Dissolved contaminants potentially present may migrate towards the Willamette River through advective flow and diffusion. Migration in groundwater will be governed by hydrogeological conditions.
- *Vertical Transport*: Dissolved contaminants potentially present may be transported vertically from shallow groundwater zone(s) to deeper groundwater zones and potentially discharge to the Willamette River.

Due to their relatively high solubility, contaminants that enter the Willamette River dissolved in groundwater are unlikely to accumulate in sediment. The elevated concentrations of the COIs detected in sediment associated with Outfall 33 are unlikely to be significantly affected by groundwater contamination.

4.2 Surface Water Pathway

4.2.1 Hydrologic Setting

The Outfall 33 drainage area is defined by the stormwater system connections to Outfall 33. The stormwater drainage network to Outfall 33 begins along Second Avenue on the south side of Market Street, continues along Clay Street, connecting with stormwater mains along Water Avenue south of Market Street, and ends at Clay Street and Water Avenue (Figure 2). During periods of high flow, the combined storm and sanitary water may be diverted to the river through

Outfall 33 at the diversion point on the corner of SE Clay Street and Second Avenue. Groundwater may also enter the stormwater lines through cracks which may exist in the pipes.

Additional stormwater lines exist to the north along Hawthorne Boulevard and also west of Water Avenue, immediately adjacent to the Willamette River. These additional stormwater lines are not considered in this PA.

The majority of the Outfall 33 drainage area is paved and developed. Permeable surfaces are generally limited to small landscaped areas along parking lots. Most stormwater generated during precipitation events presumably flows over impermeable surfaces towards stormwater inlets, manholes, and catch basins. The topography of the drainage area generally slopes towards the Willamette River with a 5% to 15% slope (COP, 2009).

The drainage area is located less than 100 feet above mean sea level (AMSL). The Outfall 33 drainage area is located outside of the 100-year floodplain but portions of several blocks are located within the 500-year floodplain (Figure 6).

The climate in the Outfall 33 drainage area is moderate. Precipitation falls almost entirely as rain, predominantly between October and May. Between 1973 and 2006, the downtown Portland area received an average annual precipitation of 42.51 inches per year (Station 356749; WRCC DRI, 2009). The highest average monthly precipitation of 7.74 inches occurs in December. The two-year, total cumulative rainfall depth for a 24-hour storm is 2.4 inches (COP, 2007). Stormwater system designers use this value to calculate runoff in the Portland area.

4.2.2 Surface Water Pathway Targets

The only surface water body hydrologically connected to the Outfall 33 drainage area is the Willamette River. Human and ecological receptors use the river and may be affected by Outfall 33 contaminants through direct or indirect contact.

The Willamette River supports a full range of navigation, fishing, and recreational uses. Navigation uses range from non-motorized small boats (e.g., sailboats, canoes, kayaks, etc.) to ocean-going vessels. Fishing uses are supported from both limited public access points on the riverbanks and from small craft. The Willamette River is open to both sport and subsistence (including Native American) fishing. Commercial fishing is allowed, although it is restricted to specific species and specific times of the year. In addition to boating and fishing recreation, the Willamette River is used for a range of recreational purposes, including water-contact recreation (e.g., water skiing), sightseeing, birding, etc. Warnings against water contact recreation are issued by the City whenever rainfall is predicted or has occurred in amounts that are associated with overflows from the combined sewer system. Willamette River banks above ordinary high water support a full range of urban recreational uses (e.g., walking, biking, and sightseeing). Recreational and commercial users of the Willamette River water may contact contaminants associated with the Outfall 33 drainage area.

URS searched for surface water users with water rights using the WRD's Water Rights Platcard Search (WRD, 2009b). The Outfall 33 drainage area is located in the southeast quarter of Willamette Meridian Section 3, Township 1 South, Range 1 East. The search was conducted for the Outfall 33 drainage area section, two sections downstream, and sections immediately east of the river-adjacent sections where users might access Willamette River water through a pipe. Specifically, URS performed the search for surface water rights within the following nine-section area:

- Township 1 South, Range 1 East, Sections 1, 2, and 3.
- Township 1 North, Range 1 East, Sections 25, 26, 27, 34, 35, and 36.

This search yielded 127 applications, permits, certificates, and claims for rights, wells, and unknown uses. These 127 documents represented 60 unique claims. A total of 52 unique claims were wells, unknown applications, and withdrawn claims that were not further considered. The seven remaining claims were:

- Claim SW 390 – The Portland Water Bureau holds a year-round, municipal claim to water from the Bull Run River with a priority date of August 6, 1886. The claim is for the full flow of the river or as much as the City requires. The point of diversion is in Township 1, Range 5 East, Section 26 and is not hydrologically connected to the Outfall 33 drainage area.

- Claim SW 391 – The Portland Water Bureau has a year-round municipal claim to water from the Little Sandy River with a priority date of June 17, 1892. The claim is for the full flow of the river or as much as the City requires. The point of diversion is unspecified, but is unlikely to be hydrologically connected to the Outfall 33 drainage area given the location of the Little Sandy River, approximately 26 miles to the east.

- Permit 51930 – OMSI holds an industrial use, year-round permit for 1.06 cubic feet per second (cfs) of Willamette River water. With a priority date of March 30, 1993, the specific use of this water is for air conditioning or heating. The point of diversion is immediately south of the Marquam Bridge, about 1,000 feet upstream of Outfall 33.

- Permit 54120 – OMSI also holds a commercial use, year-round permit for 1.84 cfs of Willamette River water. The priority date for this permit is November 24, 2003, and the specific use is unknown. The point of diversion is immediately south of the Marquam Bridge, about 1,000 feet upstream of Outfall 33.

- Claim SW 392 – The Portland Water Bureau has a year-round municipal claim to water from the Willamette River with a priority date of December 31, 1883. This claim is for 28 cfs. This claim is based on use of Willamette River water by the Portland Water Company, a private company that was later acquired by the Portland Water Bureau. The Portland Water Company owned and operated the Palatine Hill Pump Station, located about one mile upriver from the Sellwood Bridge. The Portland Water Bureau dismantled the Palatine Hill Pump Station in 1921, after the Oregon Legislature exempted municipalities from water right forfeiture for lack of use. The point of diversion for this claim is listed as Township 1 North,

Range 1 East, Section 35. Although the City's water right survives and is downstream of Outfall 33, the Willamette River is not currently a source of municipal drinking water.

- Certificate 66603 OR (Permit 50852) – Norcrest China Company and Wheat Marketing Center Incorporated, holds an industrial use, year-round certificate for 0.44 cfs of Willamette River water. With a priority date of December 4, 1989, the specific use of this water is for cooling water for a heat exchanger(s). The point of diversion is on the west shore of the river near the Broadway Bridge, approximately 1.5 miles downstream from Outfall 33.

- Permit S 53242 – Ross Island Sand & Gravel Company holds an industrial use, year-round permit for 0.535 cfs of Willamette River water. With a priority date of October 18, 1996, the specific industrial use of this water is unspecified. The point of diversion is in Township 1 North, Range 1 East, Section 27, on the east side of the river and approximately 2.7 miles downstream from Outfall 33.

Four of these seven claims are unlikely to be affected by Outfall 33 due to their lack of hydrological connectivity to the Willamette River or location upstream. One of the remaining claims appears to not have been used since 1921 and the remaining two are located more than 1 mile downstream of Outfall 33, a distance over which the effects of dilution would be great. For these reasons, surface water users with water rights are unlikely to be adversely affected by Outfall 33.

A variety of plant, fish, bird, and mammalian species use the Willamette River. As fully described by the documents prepared as part of the Portland Harbor Superfund site (Windward, 2009), at least 24 threatened, endangered, or special status species use or likely use the Willamette River in some fashion. These species are listed in the table below. Due to this use, the Willamette River could be considered a sensitive environment as defined by Oregon Administrative Rule (OAR) 340-122-115(50).

Common Name	Scientific Name	Status
Fish		
Green sturgeon	*Acipenser medirostris*	F-T
Chinook salmon	*Oncohynchus tshawytscha*	F-T; OR-C
Coastal cutthroat trout	*Oncorhynchus clarki clarki*	F-SOC; OR-V
Coho salmon	*Oncorhynchus kisutch*	F-T; OR-E
Steelhead	*Oncorhynchus mykiss gairdneri*	F-T; OR-C
Pacific lamprey	*Entosphenus tridentatus*	F-SOC; OR-V
River lamprey	*Lampetra ayresi*	F-SOC

Common Name	Scientific Name	Status
Western brook lamprey	*Lampetra richardsoni*	OR-V
Bird		
Bald eagle	*Haliaeetus leucocephalus*	OR-T
American peregrine falcon	*Falco peregrinus*	OR-V
Harlequin duck	*Histrionicus histrionicus*	F-SOC
Red-necked grebe	*Podiceps grisegena*	OR-C
Tri-colored blackbird	*Agelaius tricolor*	F-SOC
Amphibians and Reptiles		
Northern red-legged frog	*Rana aurora*	F-SOC; OR-V
Painted turtle	*Chrysemys picta*	OR-C
Western pond turtle	*Actinemys marmorata*	OR-C
Plants		
Bradshaw's lomatium	*Lomatium bradshawii*	F-E; OR-E
Hitchcock's blue-eyed grass	*Sisyrinchium hitchcockii*	F-SOC
Howellia	*Howellia aquatilis*	F-T
Nelson's sidalcea	*Sidalcea nelsonia*	F-T; F-T
Peacock larkspur	*Delphinium pavonaceum*	F-SOC
Wayside aster	*Aster vialis*	F-SOC
White-topped aster	*Aster curtus*	F-SOC
Willamette daisy	*Erigeron decumbens*	F-E; OR-E

Notes:

F-E Federally listed as endangered
F-T Federally listed as threatened (may be restricted to the Willamette or Columbia Rivers)
F-SOC Federally listed species of concern
OR-E State listed as endangered
OR-T State listed as threatened
OR-C State listed as critical
OR-V State listed as vulnerable

A wide range of human and ecological receptors are present in the Willamette River in the vicinity of Outfall 33. These receptors may contact Outfall 33 contaminants in surface water in the course of their activities.

4.2.3 Surface Water Conclusions

The surface water pathway is potentially complete. Contaminants released within the Outfall 33 drainage area could reach human and ecological receptors within the Willamette River via the following transport routes:

- *Overland Flow:* Contaminants potentially present in stormwater or adsorbed to soil particles may be transported by overland flow and may contribute to Willamette River surface water and sediment contamination.
- *Stormwater Transport:* Contaminants potentially present in stormwater or adsorbed to soil particles may be transported by stormwater to the City stormwater system and may contribute to Willamette River surface water and sediment contamination.

4.3 Air Pathway

Although there are no known major sources of air contamination within the Outfall 33 drainage area, the air pathway is potentially complete since contamination of surface soil and debris could adsorb to particulates, become airborne as dust, and contact human and ecological receptors through inhalation and/or ingestion. Based on the widespread presence of impermeable surfaces (e.g., paving, roofing) and zoning (Section 2.1), dust production and long-term exposure of residents in the immediate vicinity of the Outfall 33 drainage area is expected to be minimal when compared to other sources. The transport of soil contamination to receptors within the Willamette River is already assessed under the surface water pathways. For these reasons, the air pathway is considered to be a complete but insignificant or unquantifiable pathway.

4.4 Direct Contact Pathway

4.4.1 Physical Conditions

Releases of contaminants have been documented at properties within the Outfall 33 drainage area (Sections 2.3 and 3.0). Since the lines have been recently cleaned, there is limited potential for solids remaining in City-owned Outfall 33 stormwater pipes to be transported to the Willamette River. However, on-going discharges of solids to private or City-owned pipes may lead to those solids being transported to the river. The Rexel Taylor property is known to have potential contaminant sources exposed at the surface (burned debris, soil, rubble, etc). Site security fencing around the Rexel Taylor property prevents casual access by trespassers, but would not prevent the release of contaminants to the stormwater system and the Willamette River. Although no specific potential source as been identified at the Holman Building, the results of the 2009 sampling strongly suggest that PCBs have recently been discharged to the storm drains in the vicinity of the Holman Building. It is possible that this source may have been discharging PCBs to the stormwater line for many years.

The Rexel Taylor property and the Hawthorne Building are currently being investigated to assess whether the properties may be a potential source of ongoing contamination to Willamette River sediments. To the best of PGE's knowledge, no investigation is currently planned for the Holman Building.

4.4.2 Direct Contact Targets

The Outfall 33 drainage area is generally zoned for commercial, industrial, and institutional uses (Section 2.1). Human receptors most likely to directly contact contamination in debris, stormwater solids, and/or sediments include construction workers, commercial or light industrial workers, and recreational users of the Willamette River.

Benthic invertebrates within the Willamette River are the most likely ecological receptors to directly contact contaminated river sediments. Fish, birds, and mammals may be directly affected by contaminated river sediments through ingestion or indirectly affected through foodweb exposure.

A wide range of human and ecological receptors are present in the Willamette River in the vicinity of Outfall 33. These receptors may contact Outfall 33 contaminants in Willamette River sediment in the course of their activities.

4.4.3 Direct Contact Conclusions

Direct contact is considered a complete pathway. Although constrained by a fence at the Rexel Taylor property, direct contact with contamination related to the Outfall 33 drainage area is possible via the following transport routes:

- *Contact with Soil, Debris, and Stormwater System Solids:* Construction and commercial workers within the Outfall 33 drainage area may directly contact site debris and stormwater system solids either on a worksite or during catch basin maintenance.
- *Contact with Willamette River Surface Water:* Commercial and recreational users of the Willamette River may directly contact surface water during in-water recreational activities (e.g., boating, fishing). Ecological receptors may directly contact sediments in the Willamette River.
- *Contact with Willamette River Sediments:* Recreational users of the Willamette River may directly contact sediments on beaches or during in-water recreational activities (e.g., boating, fishing). Ecological receptors may directly contact sediments in the Willamette River.

5.0 CONCLUSIONS

This section summarizes the key conclusions of the PA and provides recommendations for future work within the Outfall 33 drainage area.

5.1 Summary of Findings

This PA identified several properties within the Outfall 33 drainage area with documented releases or documented stored hazardous materials. Of these, three properties appear most likely to have contributed to the sediment contamination associated with Outfall 33, primarily through stormwater. Those properties are the ODOT Holman Building, PGE's Hawthorne Building, and the Rexel Taylor property. Other properties within this basin may have been sources, but there is limited information available.

5.2 Data Gaps

The PA also identified several data gaps that preclude a full understanding of the historical and potentially ongoing sources of contamination within the Outfall 33 drainage area. These data gaps include:

Gaps applicable to Multiple Properties

- The historical operations and practices of property owners and operators throughout the Outfall 33 drainage basin are unknown. These operations and practices include how chemicals and other materials that may have been present at the site, and how these materials and chemicals were handled, used, stored, treated, and disposed. The extent to which these past practices contribute to current or historical to sediment contamination associated with Outfall 33 is unknown.
- For PCBs, these practices are especially important from the 1920s (when PCBs came into widespread industrial use) until the early 1990s when maintenance records are available. This lack of information represents a significant data gap that prevents assessing past contributions to Outfall 33 sediment contamination.
- The history of maintenance and repair of fluid-filled electrical transformers, automotive repair activities, the usage of chlorinated solvents, and the presence of contaminated sludge represents data gaps.

Gaps applicable to Specific Properties

- The unknown chemical identity, volume, location, and cleanup actions associated with the release at SE Third Avenue and Clay Street on January 1, 1985 represent a data gap that prevents assessing the past contributions of this release to Outfall 33 sediment contamination.
- The ODOT Holman Building received a no further action determination from the DEQ. However, TPH containing soils remain in the subsurface at depths below 3 feet bgs. Although

TPH is not a priority contaminant associated with Outfall 33, potential contributions from this source are a data gap.

- The unidentified source of PCBs to the City stormwater system in the vicinity of the Holman Building represents a significant data gap regarding potential current sources of contamination to river sediments. This source may have been discharging PCBs to the stormwater line for many years.
- The unknown historical material handling and maintenance practices at the Hawthorne Building represent a data gap in the Outfall 33 drainage area. Unknown material use and disposal practices, and the routing of sump and drain pipes prior to their connection to the sanitary sewer sometime between 1969 and 1984, represent important information gaps.
- The unknown historical operations, material handling, and equipment storage at the Rexel Taylor property represents the most significant data gap in the Outfall 33 drainage area.
    - Trinidad Asphalt Paving Company operated at this site in the beginning of the twentieth century and vacated the site by 1909. The crude oil presumably stored and handled by this operation may have contributed to sediment contamination at Outfall 33.
    - The property was operated by the Loggers and Contractors Machinery Company from 1935 to 1969 and by Ingersoll Rand Corporation from 1970 to 1991. With PCBs in varied and widespread use during these operating years, the lack of information as to the potential source of PCB-containing fluids (e.g., hydraulic fluids, lubricating oils, cutting oils, etc.) represents a significant data gap that prevents assessing past contributions to Outfall 33 sediment contamination.
    - Rexel Taylor operated the property from 1992 to 2006, when the warehouse was destroyed in a fire. Equipment used, stored, and repaired in the building reportedly included machinery, electric equipment, and forklifts. Many of these items would have contained oil (e.g., forklifts require fuel and hydraulic oil, transformers and other electrical equipment are shipped already filled with oil to prevent corrosion). Used electrical equipment may have contained oil with PCB concentrations up to 50 mg/L and still been considered “non-PCB containing” based on federal regulations.
- The unknown nature and quantity of any releases that occurred during the May 2006 fire and the associated cleanup at the Rexel Taylor property represent data gaps that prevent assessing the past and current contributions of this event to Outfall 33 sediment contamination. An inventory of equipment present at the time of the fire and fire suppression fluids used to fight the fire would help fill this important information gap.

Potentially complete pathways that warrant further consideration in the Outfall 33 drainage area include stormwater and groundwater discharge to the Willamette River, and direct contact with erodible soils, stormwater system solids, sediment, and surface water. Of these, transport of stormwater system solids via the surface water pathway most likely represents the dominant

mechanism for contamination within the Outfall 33 drainage area to sediment in the Willamette River.

5.3 Recommendations for Future Work

Based on the findings of this PA, additional investigative activities are warranted within the Outfall 33 drainage area. The following two investigations are proposed in separate sampling and analysis plans (URS, 2010b,c,d,e)

1. Further investigation of the Hawthorne Building will be conducted to help identify potential historical and current sources of contamination to the Outfall 33 drainage area, and what source control actions might be needed. This investigation will include the following:

- Sampling and analysis of concrete from the basement floor, solids from sumps and catch basins (within the basement and in the adjacent parking lot). These data will provide information about stored equipment and support the evaluation of the Hawthorne Building as a possible historical and ongoing source.
- Sampling and analysis of soil and groundwater near where the basement sump was historically routed to the City stomwater system. These data will provide information regarding potential historical sources of contamination that may have been discharged from the sump and reached near-surface soils through incomplete piping or leakage through the base of the sump.
- Mapping and analysis of stormwater solids from the privately-owned sections of the stormwater lines on the property.

2. The potential exists for historical and/or ongoing releases of PCBs and other contaminants from past operations and current debris at the Rexel Taylor property. Since very little information is available regarding this property, it represents a significant data gap in understanding the potential contribution of the Outfall 33 drainage area to the contamination in the Willamette River sediments in the vicinity of Outfall 33. Further investigation of the Rexel Taylor property would help identify potential historical and current sources of contamination to the Outfall 33 drainage area, and what source control actions might be needed. This investigation will include the following:

- Sampling and analysis of fire residues remaining in soil, debris, and concrete at the property. These data will provide information about stored equipment and support the evaluation of Rexel Taylor property as a possible historical and ongoing source.
- Video surveying of the terminus of the City's Outfall 33.and analysis of stormwater solids collected from the outfall pipe.

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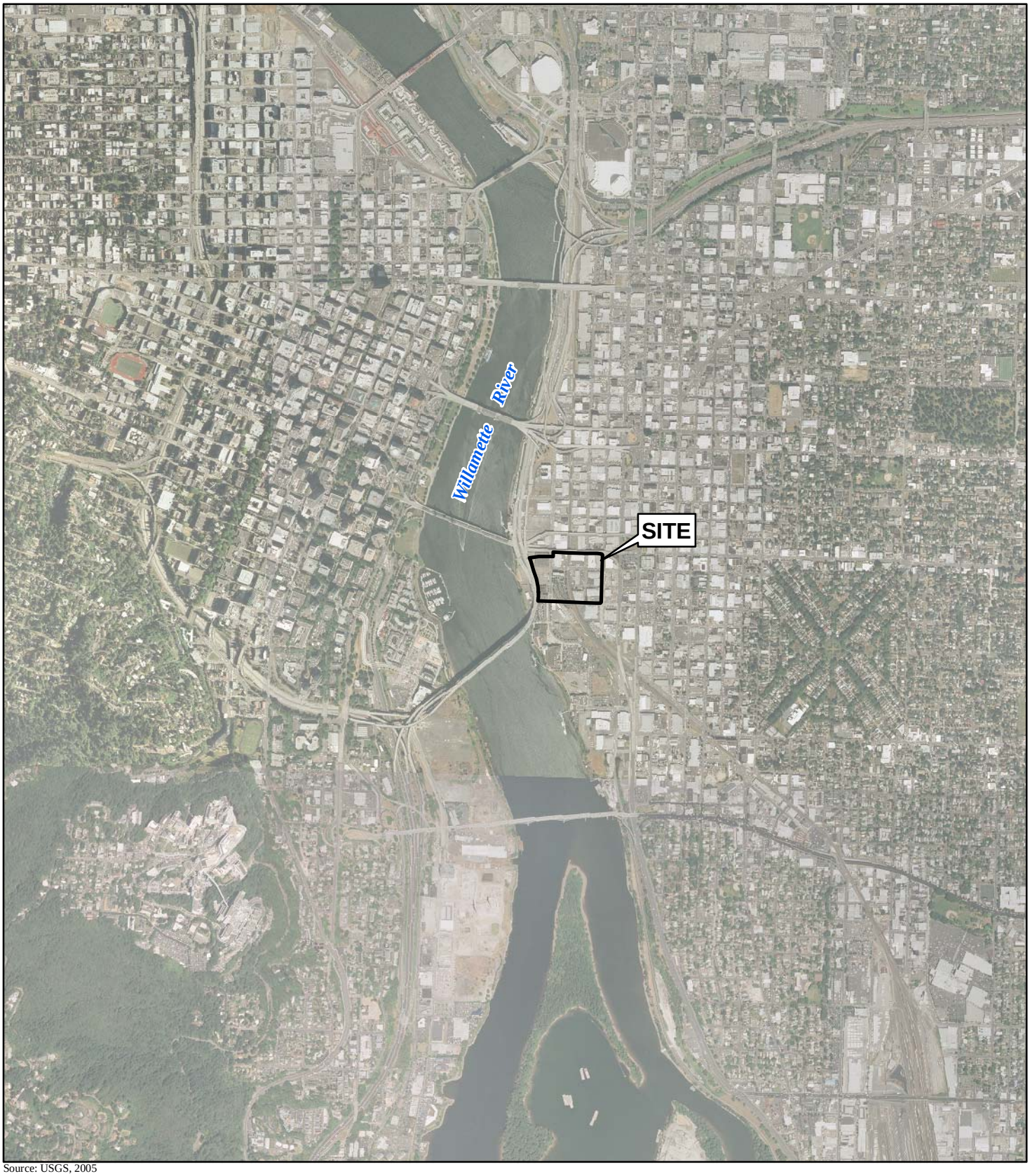

Source: USGS, 2005

0 1,000 2,000 Feet

SITE VICINITY MAP

URS

MAY 2010
25697063

OUTFALL 33 DRAINAGE AREA
PORTLAND, OR

FIGURE 1

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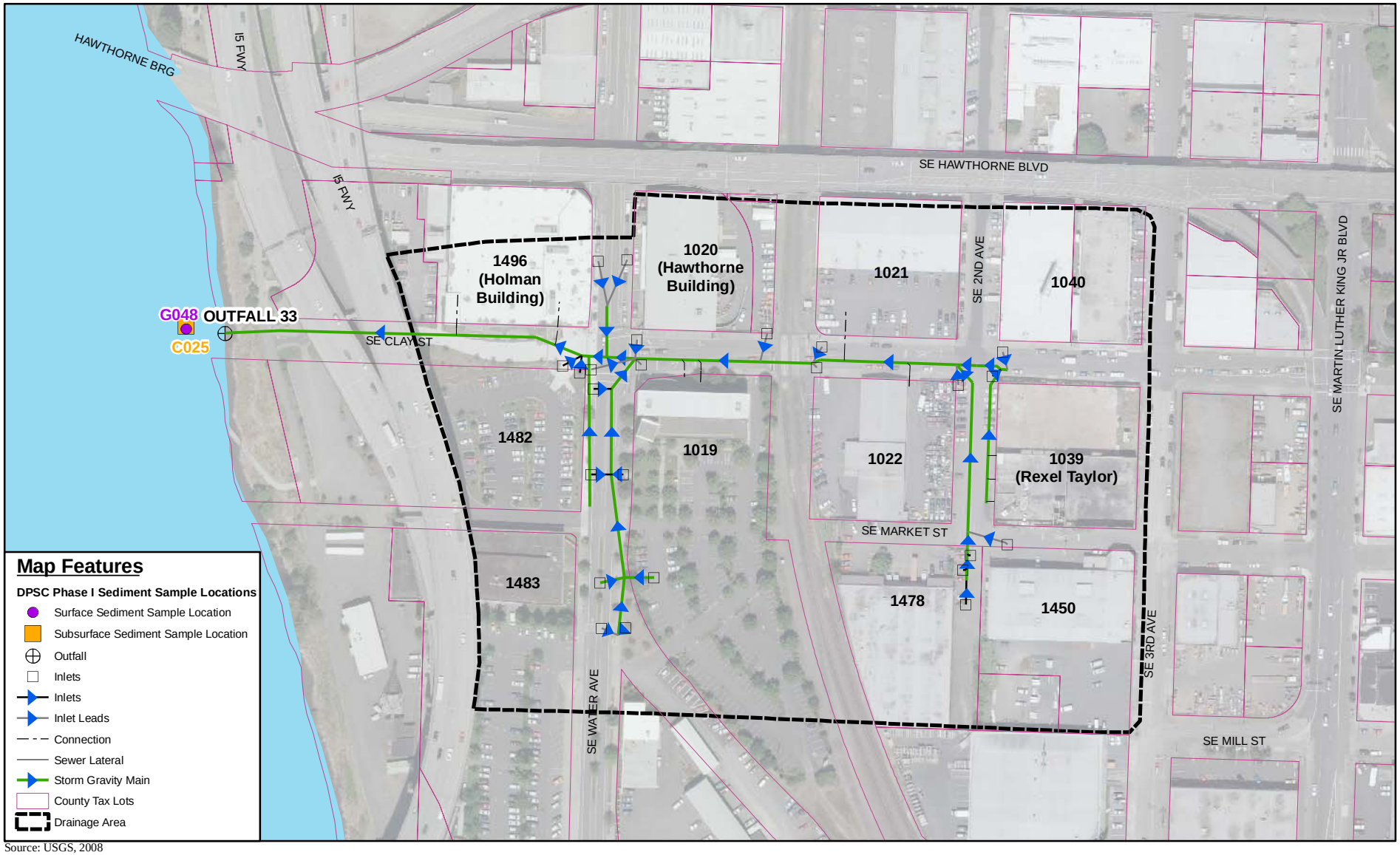

Source: USGS, 2008
City of Portland, 2008

0 200 400 Feet

OUTFALL 33 DRAINAGE AREA MAP

URS

MAY 2010
25697063

OUTFALL 33 DRAINAGE AREA
PORTLAND, OR

FIGURE 2

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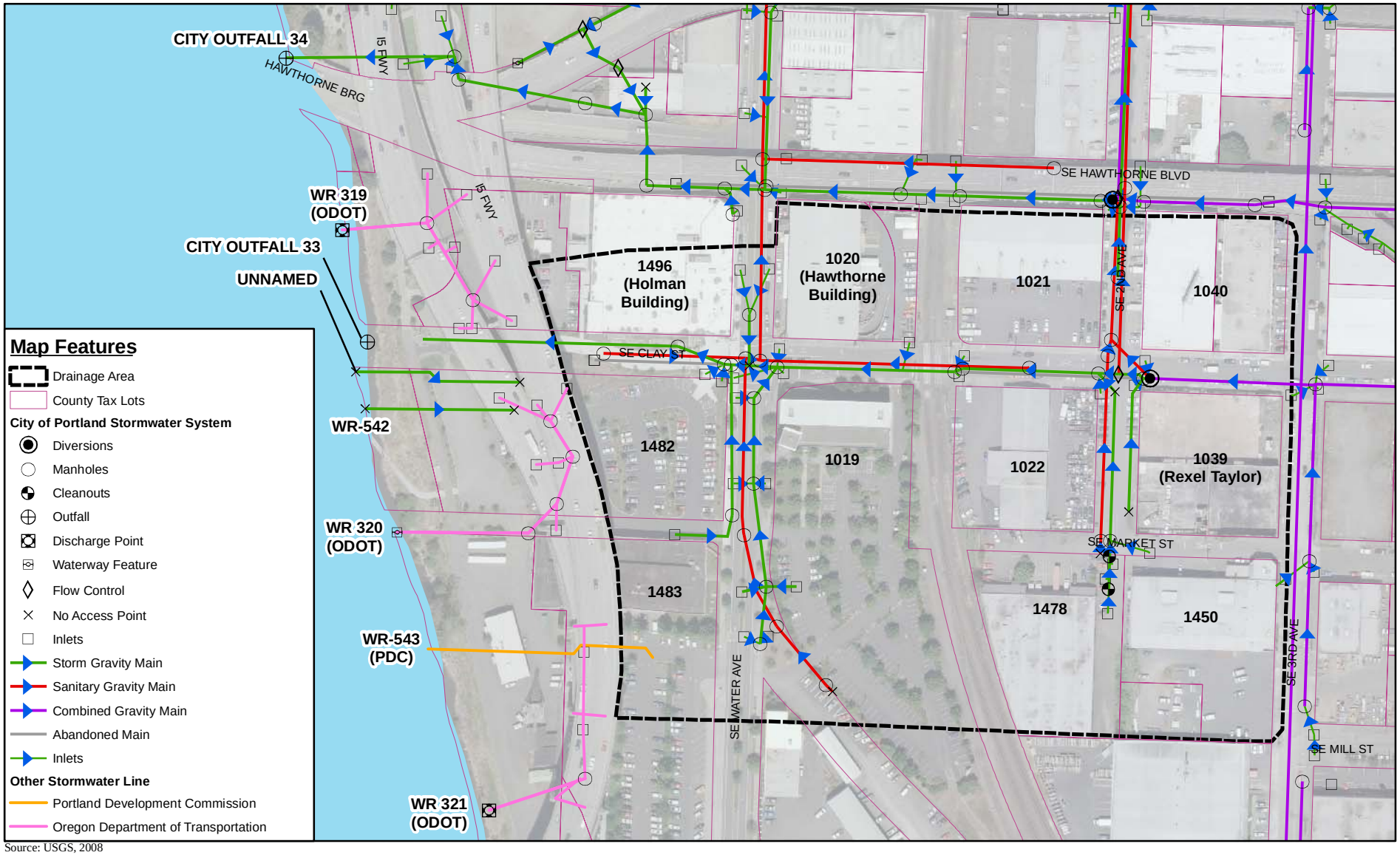

Source: USGS, 2008
City of Portland, 2008.

0 200 400 Feet

STORMWATER AND SANITARY SEWER LINE MAP

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25697063

OUTFALL 33 DRAINAGE AREA
PORTLAND, OR

FIGURE 3

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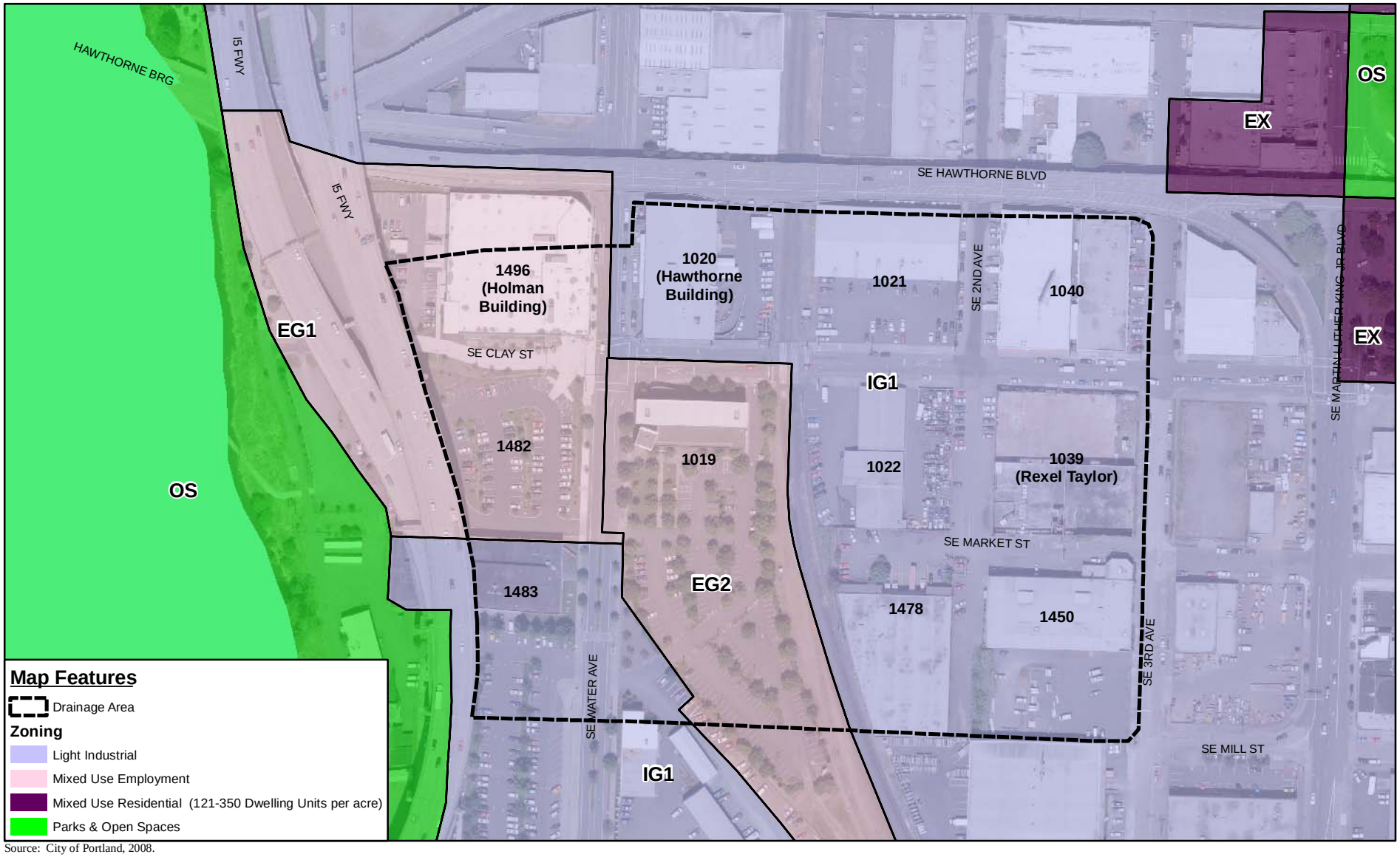

Source: City of Portland, 2008.

0 200 400 Feet

SITE ZONING MAP

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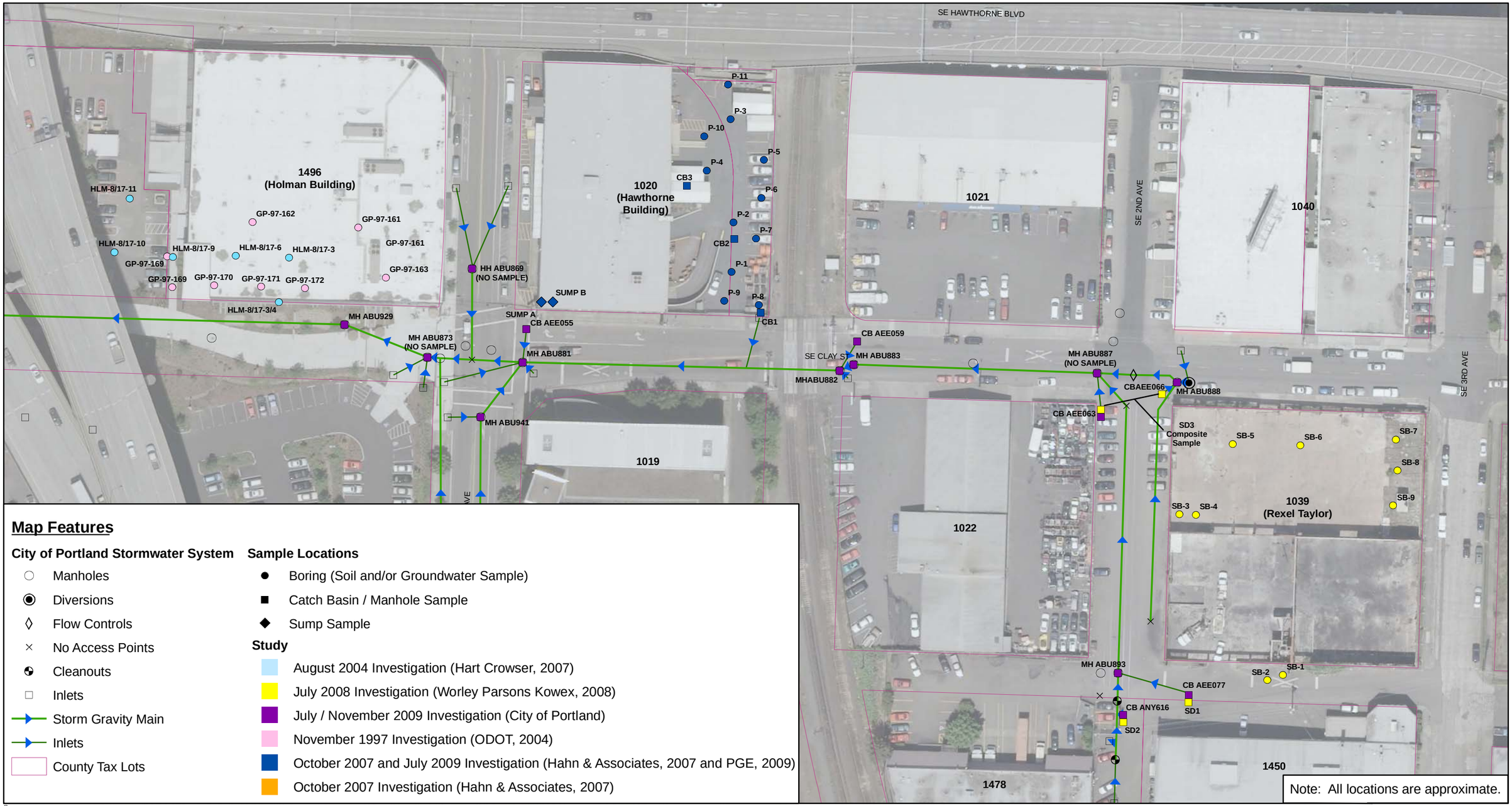
MAY 2010
25697063

OUTFALL 33 DRAINAGE AREA
PORTLAND, OR

FIGURE 4

K:\25697063_PGE_Env_Services_Phase_2\GIS Figures\MXD\Outfall33\Fig4.mxd



Map Features

City of Portland Stormwater System

- Manholes
- Diversions
- Flow Controls
- No Access Points
- Cleanouts
- Inlets
- Storm Gravity Main
- Inlets
- County Tax Lots

Sample Locations

- Boring (Soil and/or Groundwater Sample)
- Catch Basin / Manhole Sample
- Sump Sample

Study

- August 2004 Investigation (Hart Crowser, 2007)
- July 2008 Investigation (Worley Parsons Kowex, 2008)
- July / November 2009 Investigation (City of Portland)
- November 1997 Investigation (ODOT, 2004)
- October 2007 and July 2009 Investigation (Hahn & Associates, 2007 and PGE, 2009)
- October 2007 Investigation (Hahn & Associates, 2007)

Sources:
1) ODOT, 2004
2) Hart Crowser, 2004
3) Hahn and Associates, 2007
4) PGE, 2009
5) WorleyParsons Komex, 2008b

75 0 75 150 Feet

URS

APPROXIMATE SAMPLE LOCATION MAP

MAY 2010
25697063

OUTFALL 33 DRAINAGE AREA
PORTLAND, OR

FIGURE 5

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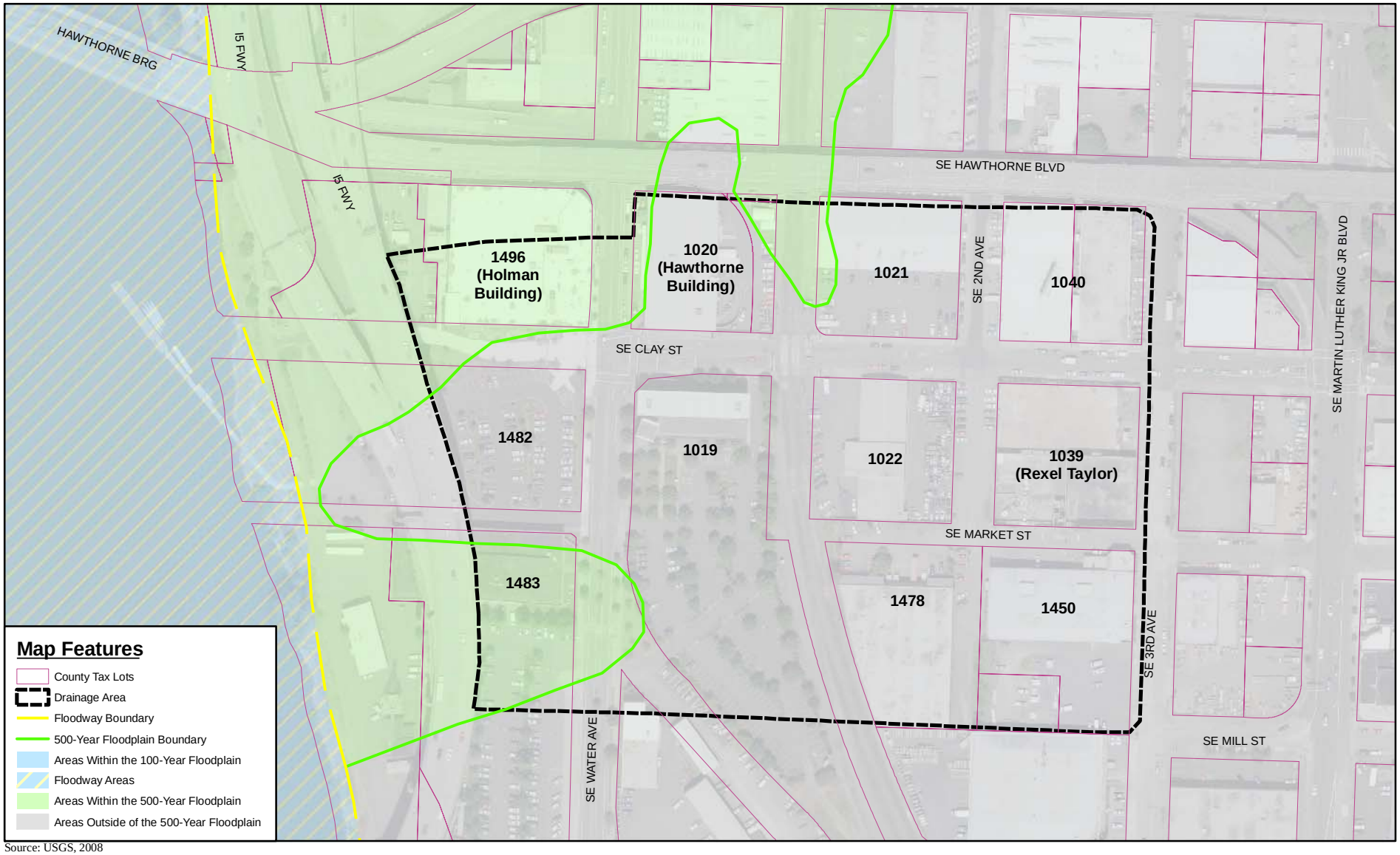

Source: USGS, 2008
FEMA, 2004.

0 200 400 Feet

FLOOD ZONE MAP

URS

MAY 2010
25697063

OUTFALL 33 DRAINAGE AREA
PORTLAND, OR

FIGURE 6

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Table 1
Property Uses and Potential Associated Contaminants

Sanborn Map Date	Block Number													
	1019		1020 (Hawthorne Building)		1021		1022		1039 (Rexel Taylor Property)		1040		1450	
	Property Use	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*
1889	Boat shop with additional small unidentified buildlings,	Fuels, non-PCB containing transformer oil, paint, VOCs, PAHs, wood preservatives	Undeveloped	None	Undeveloped	None	Undeveloped	None	Undeveloped	None	Single small unidentified building; remainder is undeveloped	None	No information	Unknown
1901	Boarding and lodging, tenements	Municipal trash	Harvesting and Machinery Depot (hay storage, flour & feed stable, model and brass foundry, blacksmith & wagon shop, meat shop, furnaces, office and stables)	Hydraulic oil, non PCB containing transformer oil, heavy metals, solvents, PAHs	Knapp Burrell and Co's Warehouse (agricultural implements and havesting machinery)	Fuels, non-PCB containing transformer oil, paint	J.I. Case Threshing Machine Co Depot (machine storage yard, planked below street level, repairing and setting up area, forge)	Hydraulic oil, non-PCB containing transformer oil	Trinidad Asphalt Paving Co's (sand drying furnaces, sand grinders, asphalt melting furnaces, dipping tank, grinding mixing bin, underground crude oil tanks)	Heavy oil, diesel, PAHs, paint, hydraulic oil, non-PCB containing transformer oil	Unidentified Buildings	Unknown	Domestic housing, hen house	Municipal wastes
	Blacksmith shop and wagon shop, Flander and Ocobock Cos (dried fruit packing), fruit garden	Fuels, heavy metals			R.M. Wade and Co's Warehouse (agricultural implements, wagons, carriages, etc., shipping room, office)	Fuels, non-PCB containing transformer oil, paint								
1909	Street car tracks	Hydraulic oil, non-PCB containing transformer oil	Undeveloped	None	R.M. Wade and Co (agricutural implements, office)	Fuels, non-PCB containing transformer oil, paint	J.I. Case Threshing Machine Co's Depot, office	Hydraulic oil, non-PCB containing transformer oil	Undeveloped	None	Polson Implements Co. (agricultural implements warehouse)	Fuels, hydraulic oil, non-PCB containing transformer oil, paint	Domestic housing, hen house	Municipal wastes
							Columbia Milling Co's Flour & Cereal Mill (flour and grain warehouse, mill)	Pesticides, hydraulic oil, non-PCB containing transformer oil						
1924	Undeveloped	None	Portland Electric Power Company (PGE) (Hawthorne Building)	non-PCB containing transformer oil, paints, solvents,	Agricultural Implements Warehouse	Fuels, non-PCB containing transformer oil, paint	Agricultural Implements and Auto warehouse/Columbia Milling Co's Flour Mill (flour and grain warehouse, steel wheat tank)	Pesticides, hydraulic oil, non-PCB containing transformer oil	Undeveloped	None	Agricultural Implements warehouse, office, and mattress factory	Fuels, hydraulic oil, non-PCB containing transformer oil, paint	Coal shed, outhouse	Heavy metals, human waste
1950	Undeveloped	None	PGE (Hawthorne Building)	potentially PCB containing transformer oil, paints, solvents	Agricultural Implements Warehouse	Fuels, potentially PCB containing transformer oil, paint	Centennial Flouring Mills Co. (flour and grain warehouse, steel wheat tank, mill, carpentry shop)	Pesticides, hydraulic oil, potentially PCB containing transformer oil	Loggers and Contractors Machinery (repair shops, reinforced plastered walls, parts and machinery storage, wash room, boiler)	Diesel, paint, solvents, hydraulic oil, potentially PCB containing transformer oil	Agricultural Implements, Poultry Supplies and Building Supplies	Fuels, hydraulic oil, potentially PCB containing transformer oil, paint	Tractors and machinery	Fuel, hydraulic oil
1969	Freight Depot and Parking	Fuels, hydraulic oil, potentially PCB containing transformer oil, heavy metals, PAHs	PGE (Hawthorne Building) and parking lot	potentially PCB containing transformer oil, paints, solvents, fuels, heavy metals, PAHs	Parking	Fuels, heavy metals, PAHs	Messal Bag Co. Burlap Bag Manufacturing (grain bins, steel wheat bin, bag warehouse, bag & salvage paper warehouses)	Pesticides, hydraulic oil, potentially PCB containing transformer oil	Loggers and Contractors Machinery (repair shops, reinforced plastered walls, parts and machinery storage, wash room, boiler)	Diesel, paint, solvents, hydraulic oil, potentially PCB containing transformer oil	Industrial and Agricultural Implements and Parking	potentially PCB containing transformer oil, fuels, heavy metals, PAHs	Tractors and machinery/storage	Fuel, hydraulic oil

Table 1
Property Uses and Potential Associated Contaminants

Sanborn Map Date	Block Number										Roadways	
	1478		1482		1483		1496 (Holman Building)		1498			
	Property Use	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*	*Property Use*	*Potential Associated Contaminants*
1889	Undeveloped	None	Shipyard, inundated by the river,	Fuels, non-PCB containing transformer oil, paint, VOCs, PAHs, wood preservatives	Kline and Klinsing Stave Factory (pump, steam lift, 25hp engine), Klines Cooper Shop T.C., Portland Lime and Cement Co	Fuel, hydraulic oil	Small barn (cart or cow) and a shed	None	No information	Unknown	Planked roadway, 5 ft above ground, single railroad track (First Ave)	Fuels, heavy metals, PAHs
1901	Undeveloped	None	Floats on beach	None	Boat carpenter and vacant buildings	Fuel, paint, solvents	J.H. Johnston's Ship Building Yard, (freight wharf, machine shop, electric motor, galvanizing furnace, sawing and planing, molding loft, blacksmith)	Fuels, non-PCB containing transformer oil, paint, heavy metals, PAHs, VOCs	No information	Unknown	Planked roadways, Oregon Railroad and Navigation Co's track on trestle, Southern Pacific Co's 4-in pipes	Fuels, heavy metals, PAHs
							Oregon City Electric Express and Freight Depot (along Hawthorne)	Fuels, hydraulic oil, non-PCB containing transformer oil				
1909	Undeveloped	None	Portland Railway Light & Power Co Freight Yards and Wharves (freight depot, offices), oils	Fuels, hydraulic oil, non-PCB containing transformer oil, paint	Portland Railway Light & Power Co store room / Car barn, repair shop	non-PCB containing transformer oil	Beer depot and waiting room, Portland Railway Light & Power Co. freight yards and wharves	Fuels, hydraulic oil, non-PCB containing transformer oil	Phoenix Iron Works (machine shop, patter storage & shop, foundry, cement laundry & tray factory)	Fuels, non-PCB containing transformer oil, paint	Southern Pacific Railroad (First Ave), Oregon Railroad and Navigation Co's track, 4-in & 6-in pipes, roadways, Madison Bridge, R&N RR (Second Ave)	Fuels, heavy metals, PAHs
1924	Coal shed	Heavy metals	Portland Electric Power Company, Freight Depot, store rooms, lockers.	Fuels, hydraulic oil, non-PCB containing transformer oil, paint	Portland Electric Power Company (PGE), store room	non-PCB containing transformer oil, heavy metals	Caravan Motors Co. (auto and truck storage, compressor room, oil and gas) / Creighton Boiler & Welding Works	Fuels, heavy metals, VOCs, solvents	No information	Unknown	P.E.P. Co. Industrial Track, 30-in & 12-in pipe, 14-in pipe at 1039, roadways, other tracks	Fuels, heavy metals, PAHs
1950	Contractors Warehouse and machinery	Fuels, potentially PCB containing transformer oil	Pacific-Atlantic Shippers Assoc Freight Depot, Freight warehouse, offices	Fuels, hydraulic oil, potentially PCB containing transformer oil, paint	PGE Garage & Machine Shop, battery room	Fuels, solvents, potentially PCB containing transformer oil, heavy metals, acid/caustics	Holman Transfer Co, machine shop, auto parking	Fuels, heavy metals, PAHs	No information	Unknown	Southern Pacific Railroad tracks, P.E.P. Co. Industrial track, 30-in & 12-in pipe, 14-in & 8-in pipe at 1039, roadways	Fuels, heavy metals, PAHs
1969	Scattered lumber piles	Wood preservatives, hydraulic oil	Parking with railroad tracks, gas and oil tanks?	Fuels, hydraulic oil, potentially PCB containing transformer oil, heavy metals, PAHs	PGE Garage & Machine Shop, battery room, Freight Depot	Fuels, solvents, potentially PCB containing transformer oil, heavy metals, acid/caustics	Holman Transfer Company	Unknown	No information	Unknown	Concrete viaduct, pipe, roadways, P.E.P. Co. Industrial tracks	Fuels, heavy metals, PAHs

Note:
Outfall 33 drainage area is bounded by the south side of Market Street to Hawthorne Boulevard and the east side of Water Avenue to Third Avenue.
Hydraulic oil and transformer oil may have contained PCBs
VOCs - volaitile organic compound

PAHs = polycyclic aromatic hydrocarbons
PCBs = polychlorinated biphenyls

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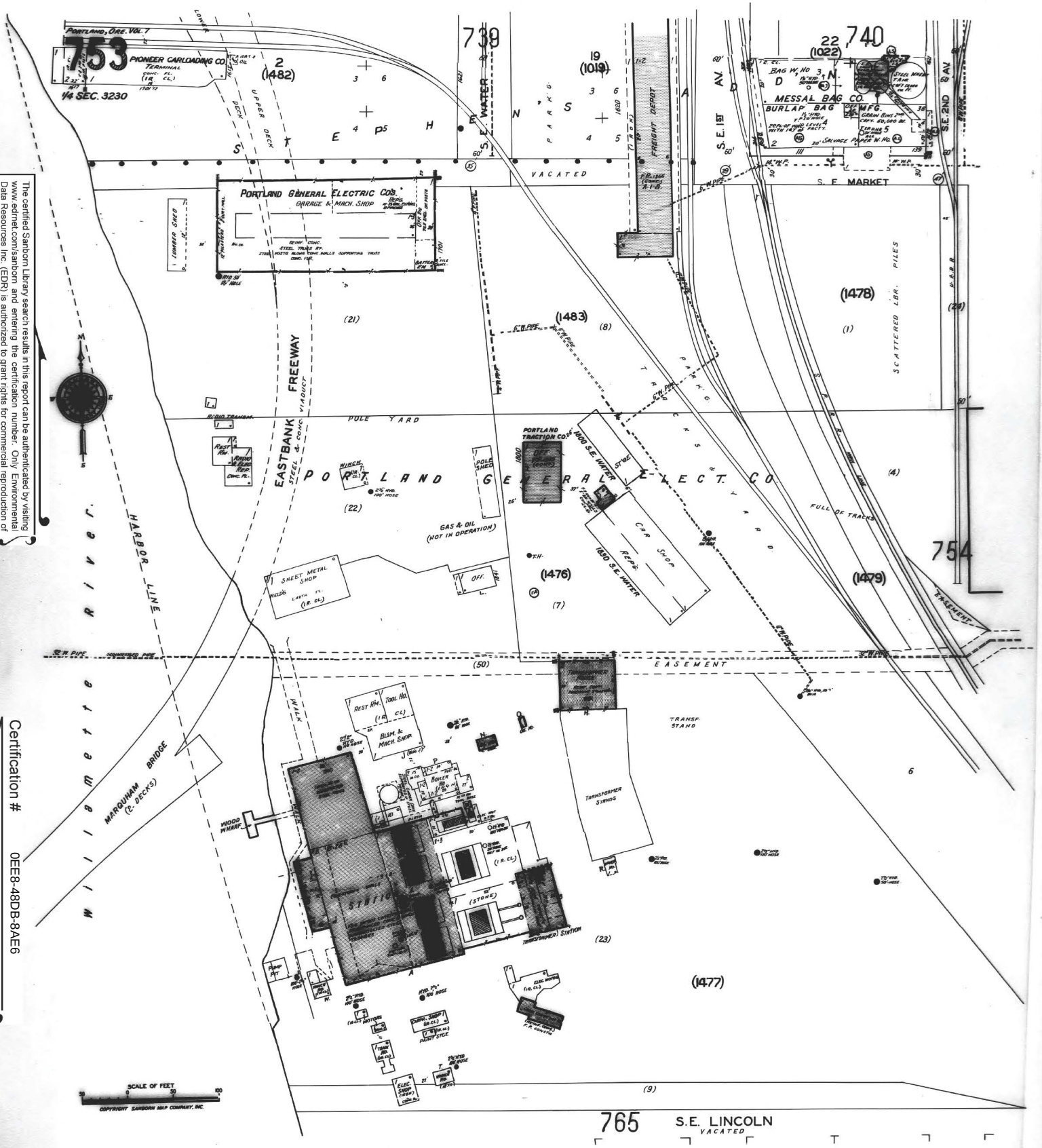

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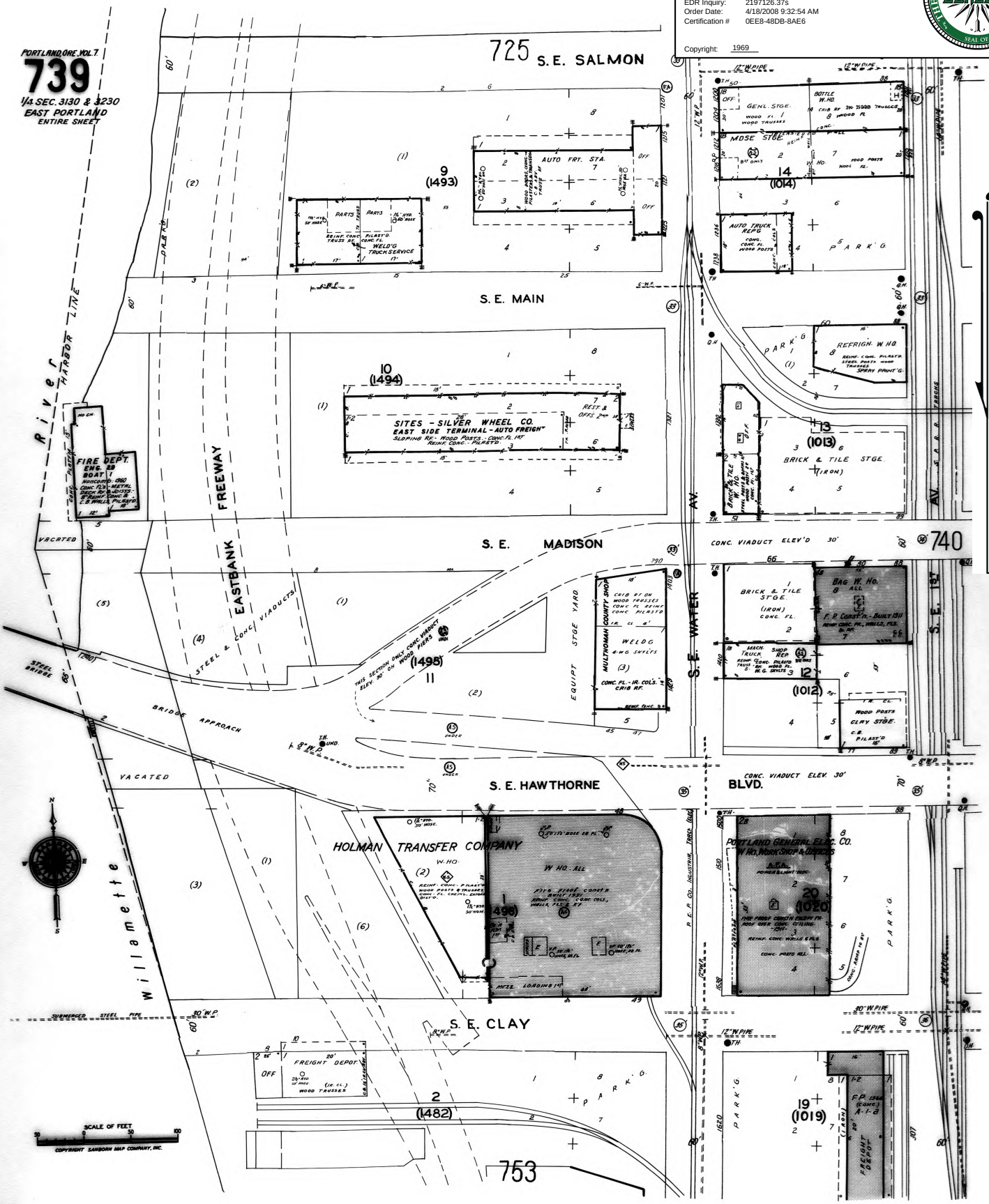

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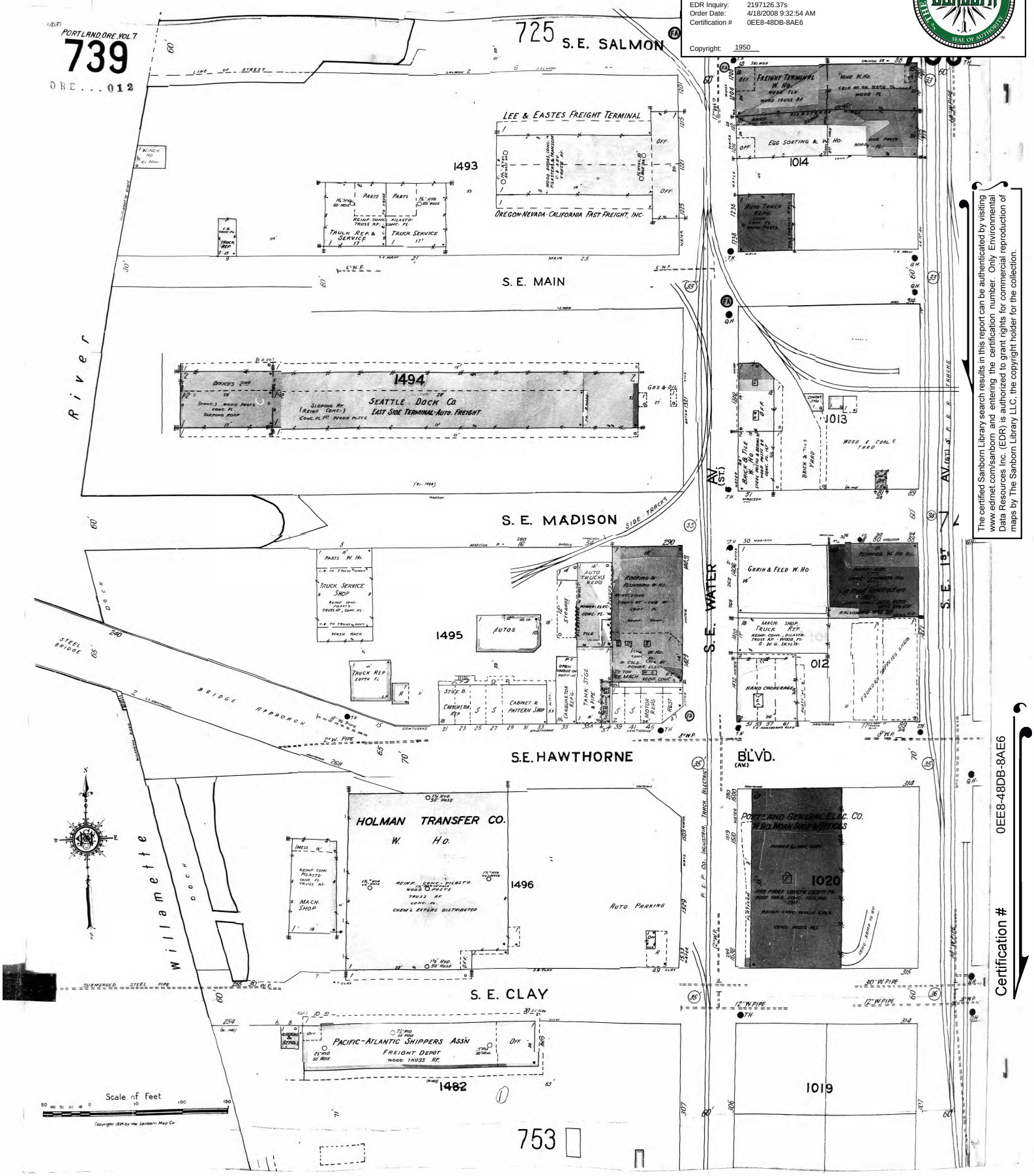

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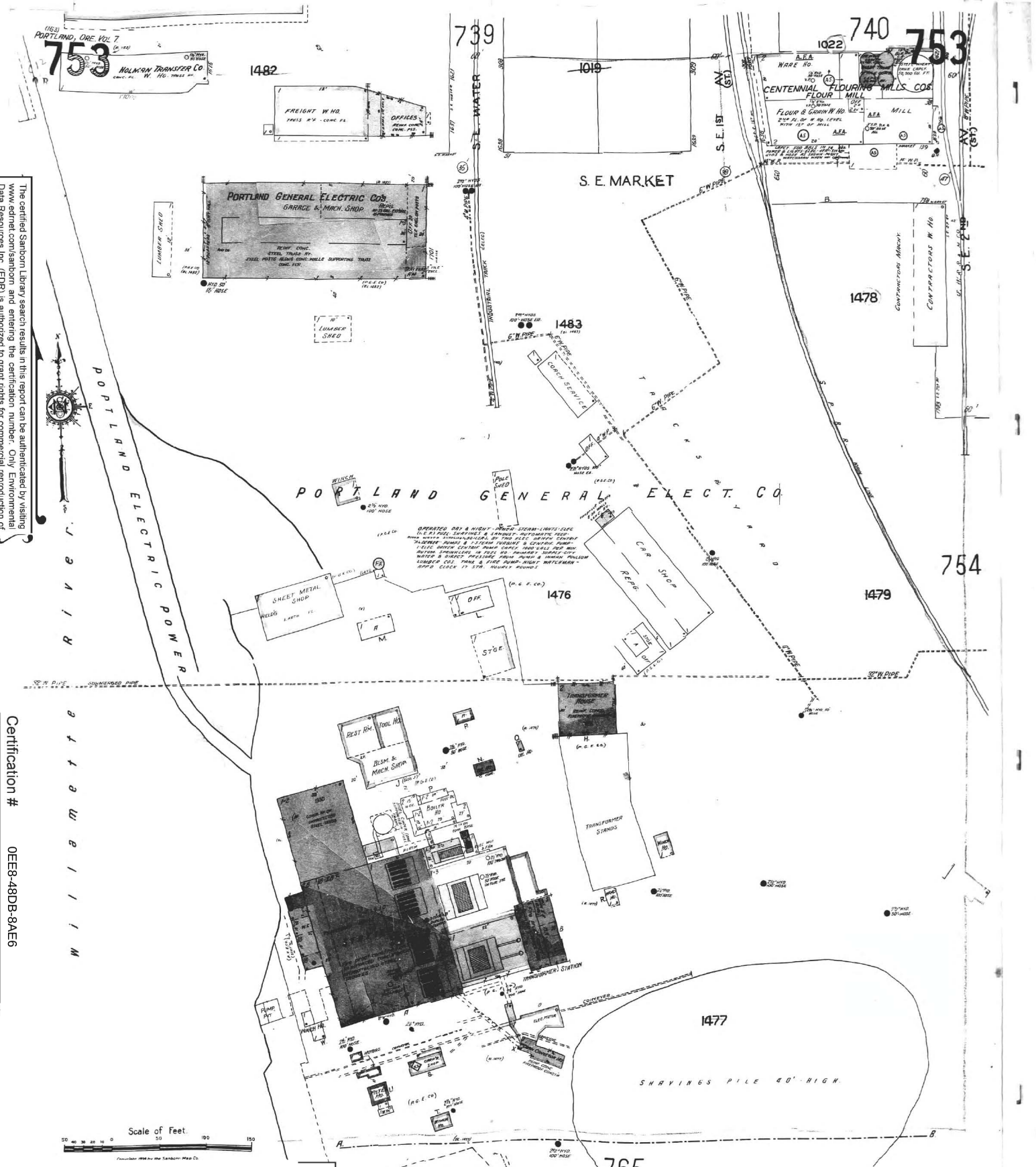

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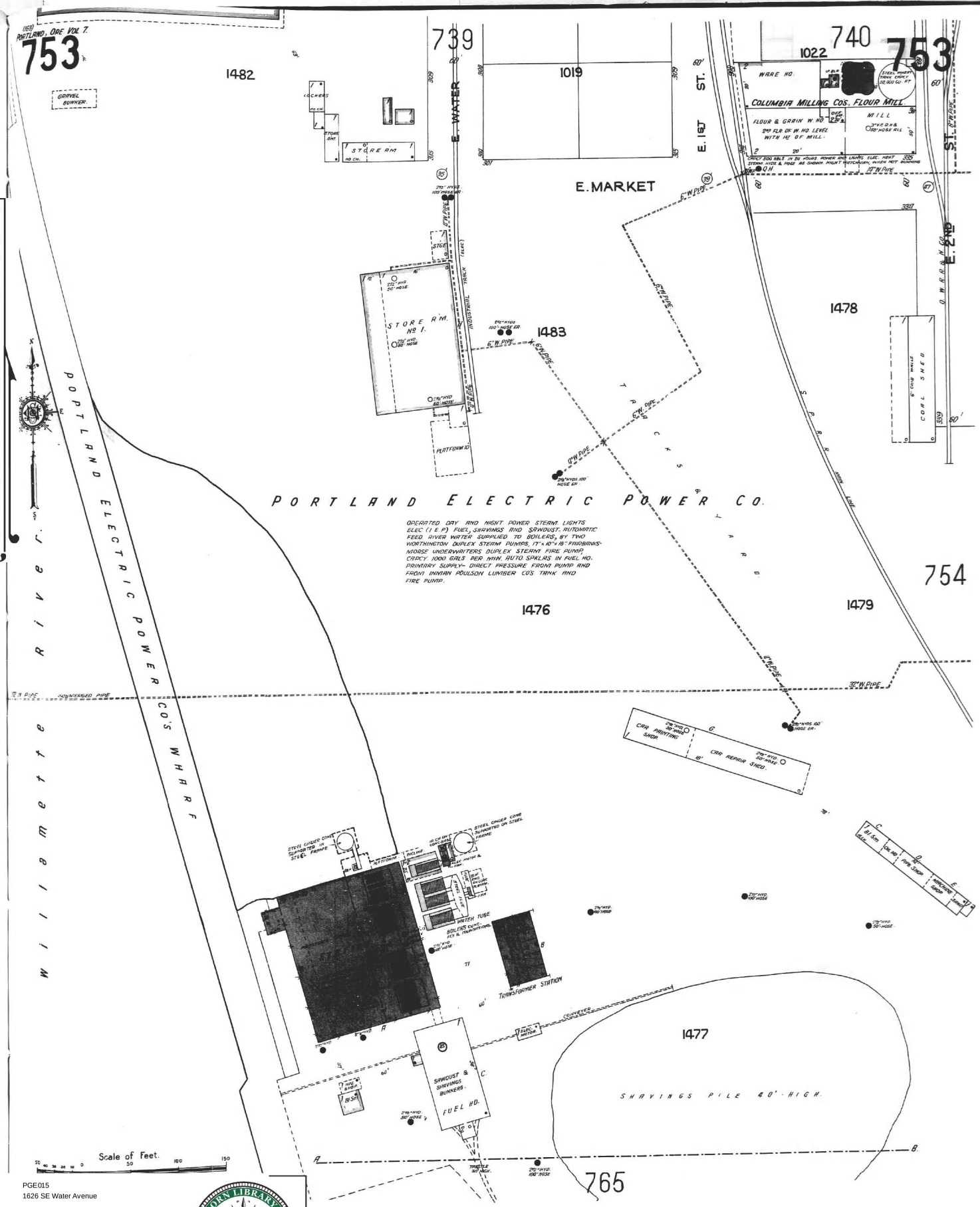

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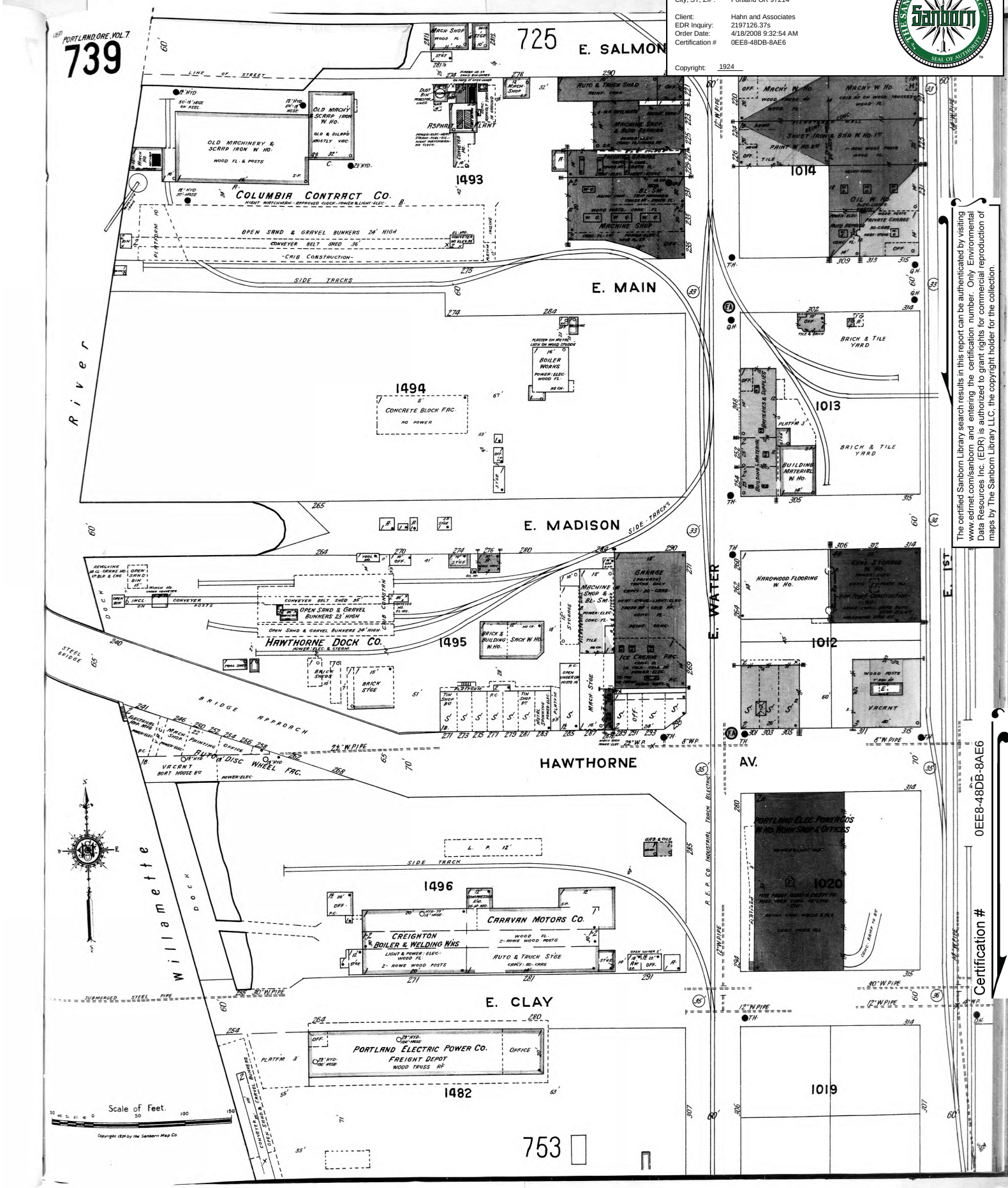

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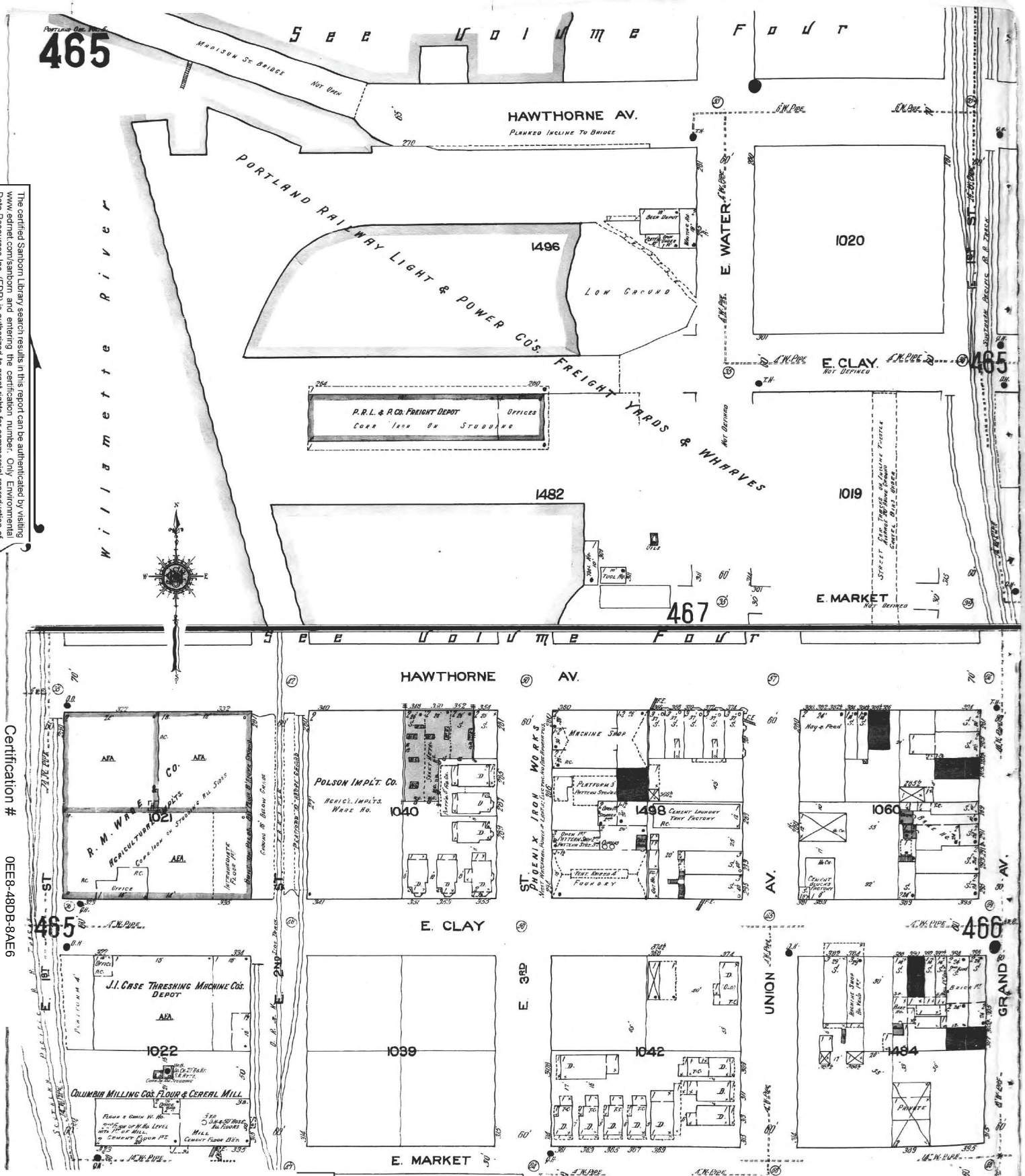

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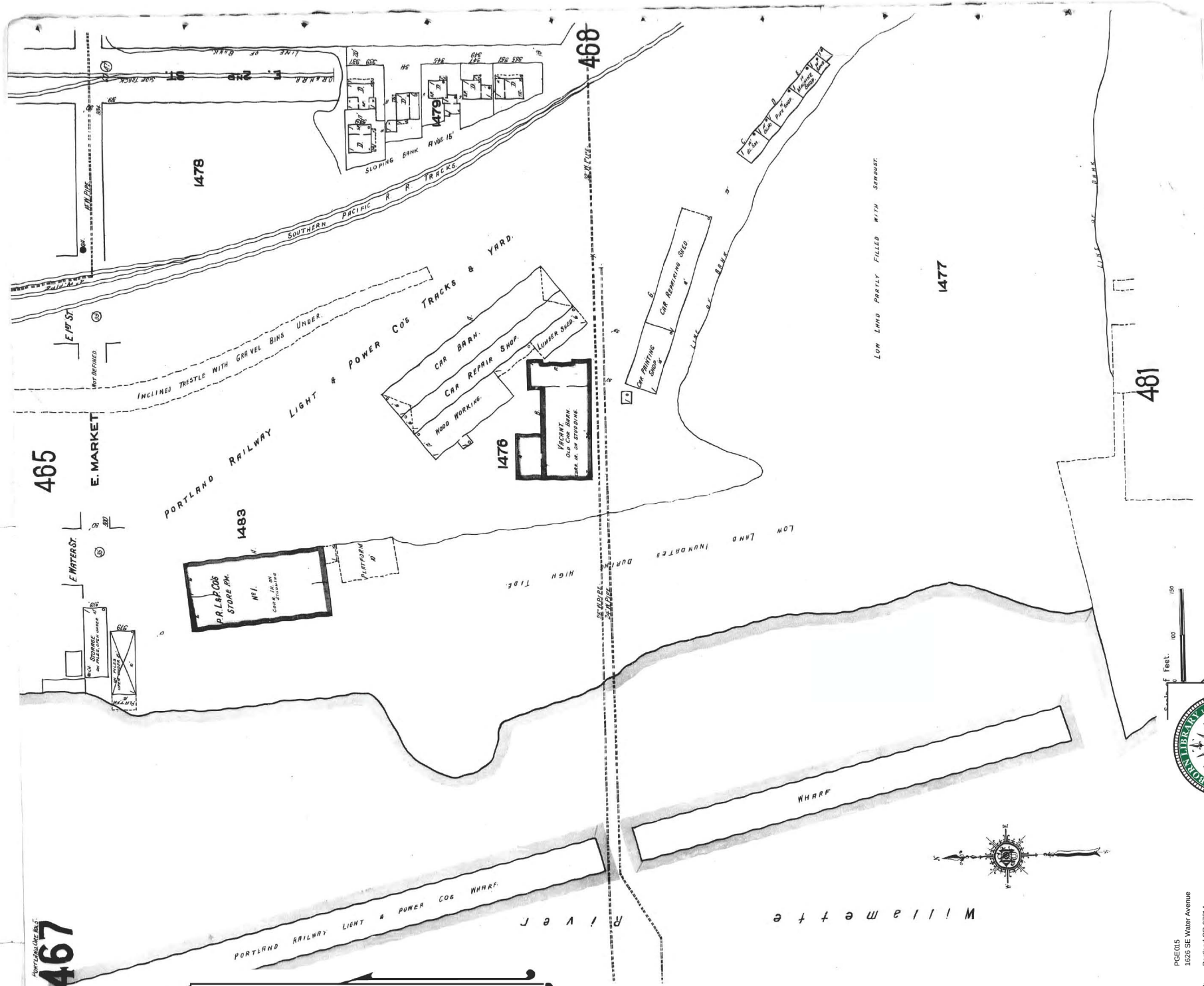

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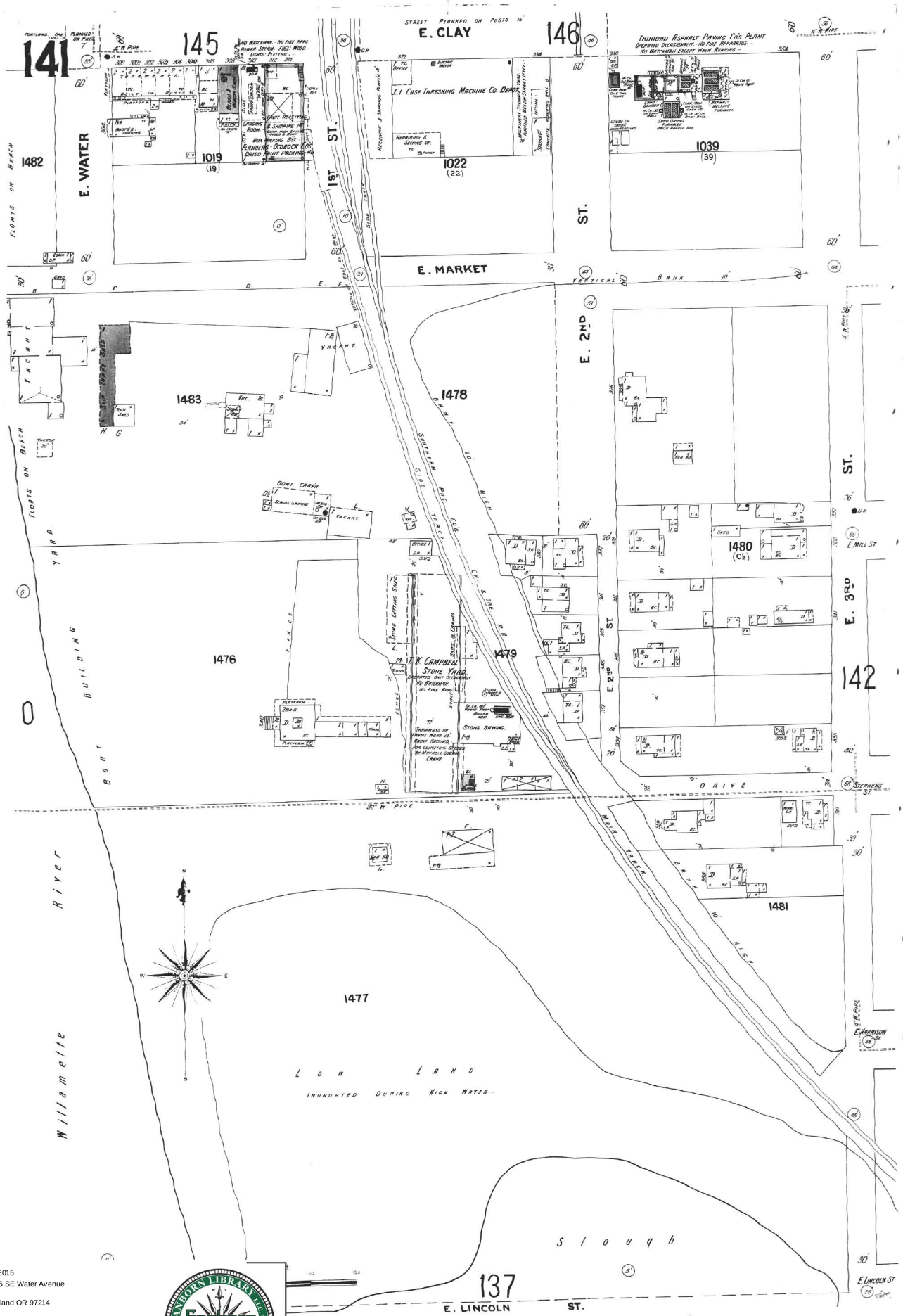

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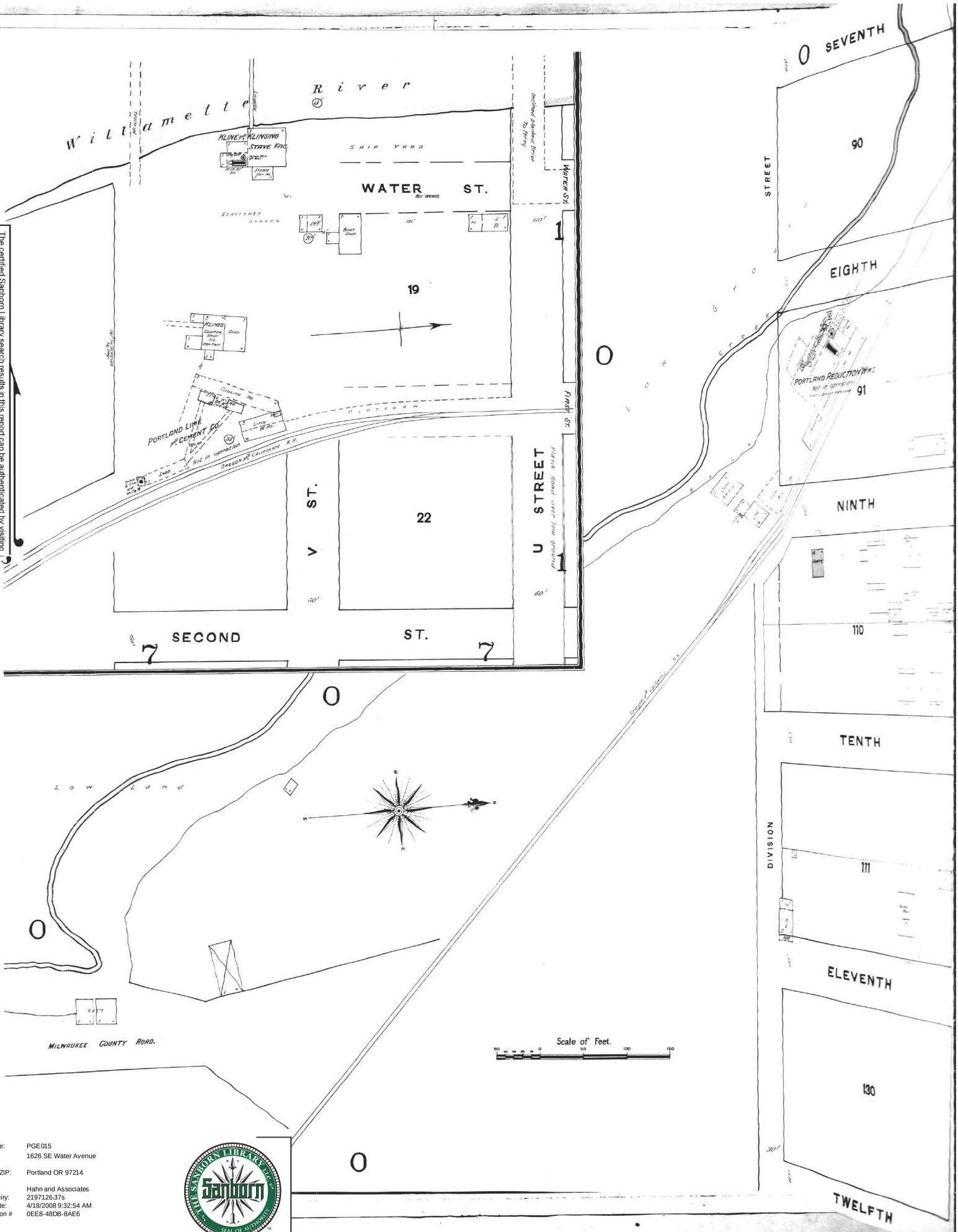

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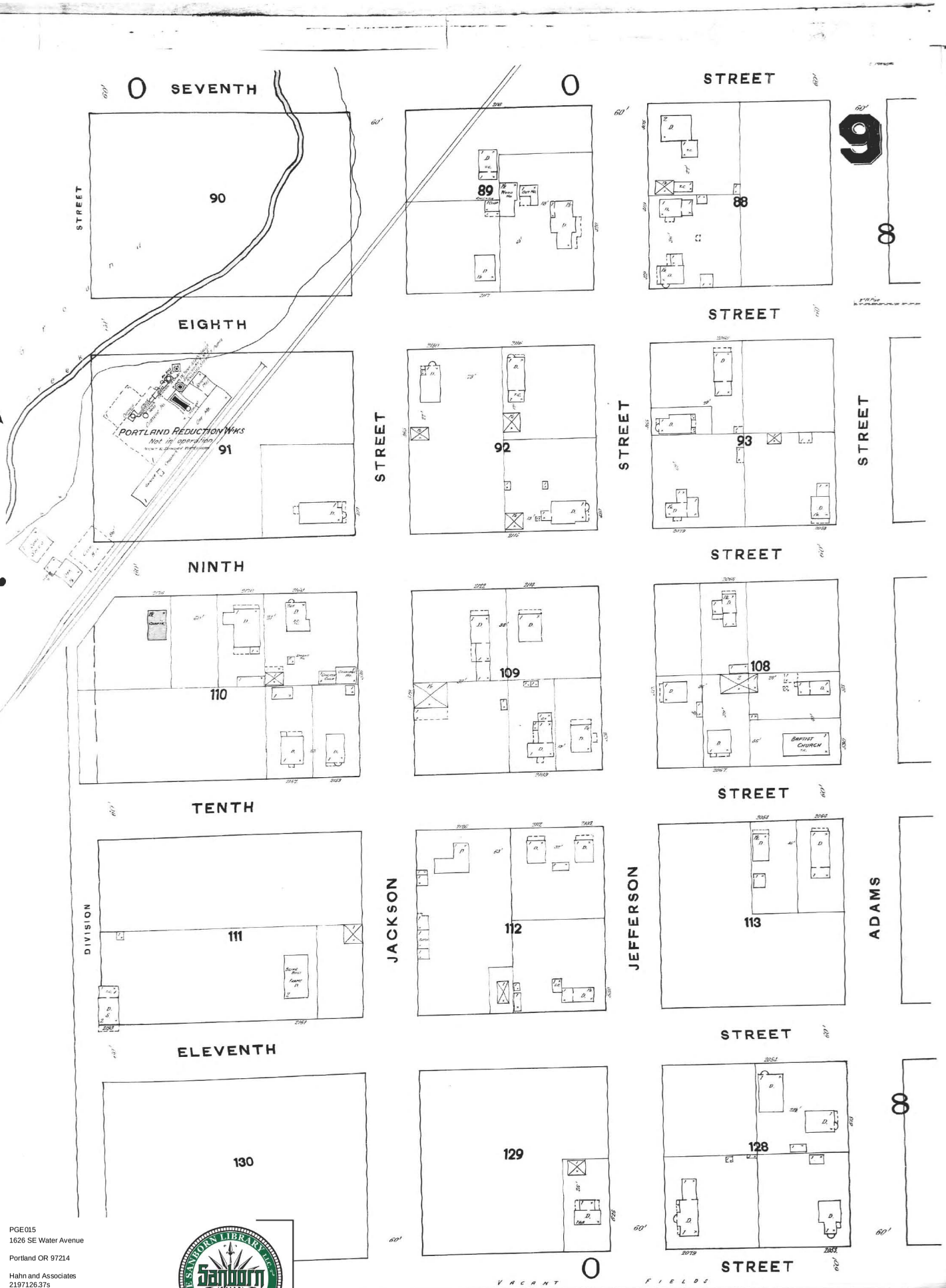
Certification # 0EE8-48DB-8AE6

Site Name:	PGE015
Address:	1626 SE Water Avenue
City, ST, ZIP:	Portland OR 97214
Client:	Hahn and Associates
EDR Inquiry:	2197126.37s
Order Date:	4/18/2008 9:32:54 AM
Certification #	0EE8-48DB-8AE6

Copyright: 1889



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Certification # 0EE8-48DB-8AE6

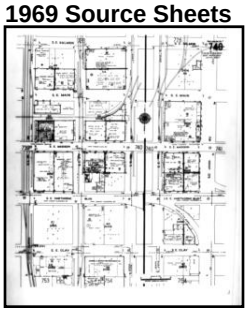
Site Name:	PGE015
Address:	1626 SE Water Avenue
City, ST, ZIP:	Portland OR 97214
Client:	Hahn and Associates
EDR Inquiry:	2197126.37s
Order Date:	4/18/2008 9:32:54 AM
Certification #	0EE8-48DB-8AE6

Copyright: 1889

Sanborn Sheet Thumbnails

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1969 Source Sheets



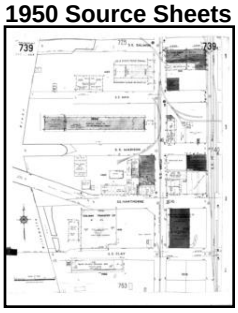
Volume 7, Sheet 740

Volume 7, Sheet 753

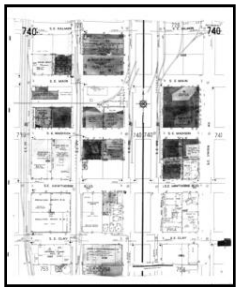
Volume 7, Sheet 754

Volume 7, Sheet 739

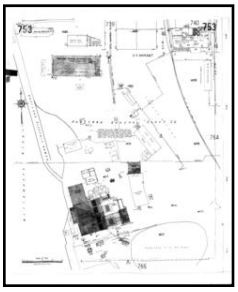
1950 Source Sheets



Volume 7, Sheet 739



Volume 7, Sheet 740



Volume 7, Sheet 753

Volume 7, Sheet 754

1924 Source Sheets

Volume 7, Sheet 700

Volume 7, Sheet 739

Volume 7, Sheet 740

Volume 7, Sheet 753

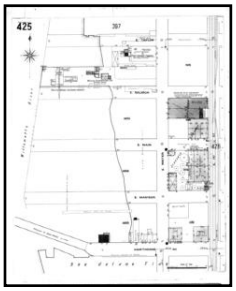
Volume 7, Sheet 754

1909 Source Sheets

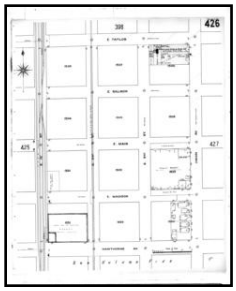
Volume 5, Sheet 465

Volume 5, Sheet 467

Volume 5, Sheet 468



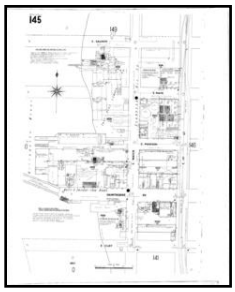
Volume 4, Sheet 425



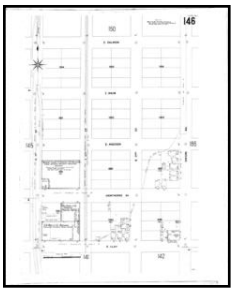
Volume 4, Sheet 426

1901 Source Sheets

Volume 2, Sheet 141



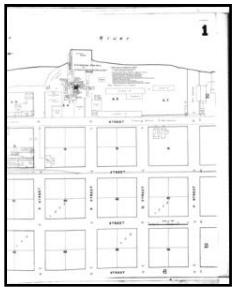
Volume 2, Sheet 145



Volume 2, Sheet 146

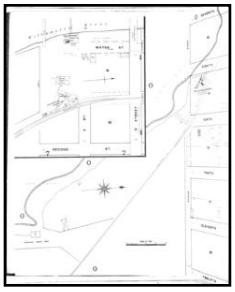
1889 Source Sheets

Volume 2, Sheet 1



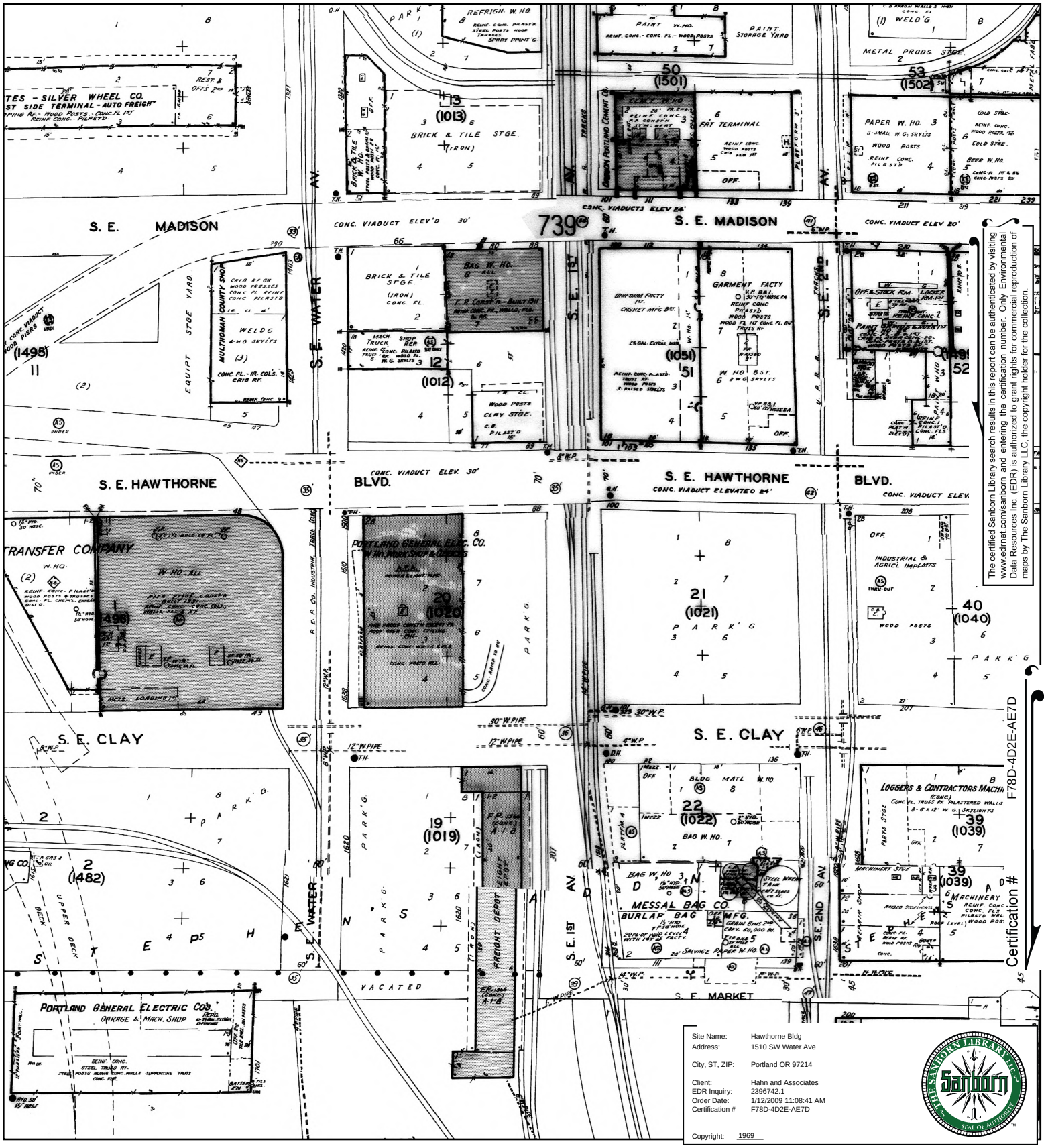
Volume 2, Sheet 1

Volume 2, Sheet 7



Volume 2, Sheet 9

1969 Certified Sanborn Map



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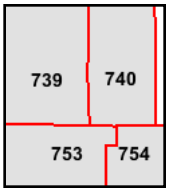
Site Name:	Hawthorne Bldg
Address:	1510 SW Water Ave
City, ST, ZIP:	Portland OR 97214
Client:	Hahn and Associates
EDR Inquiry:	2396742.1
Order Date:	1/12/2009 11:08:41 AM
Certification #	F78D-4D2E-AE7D

Copyright: 1969

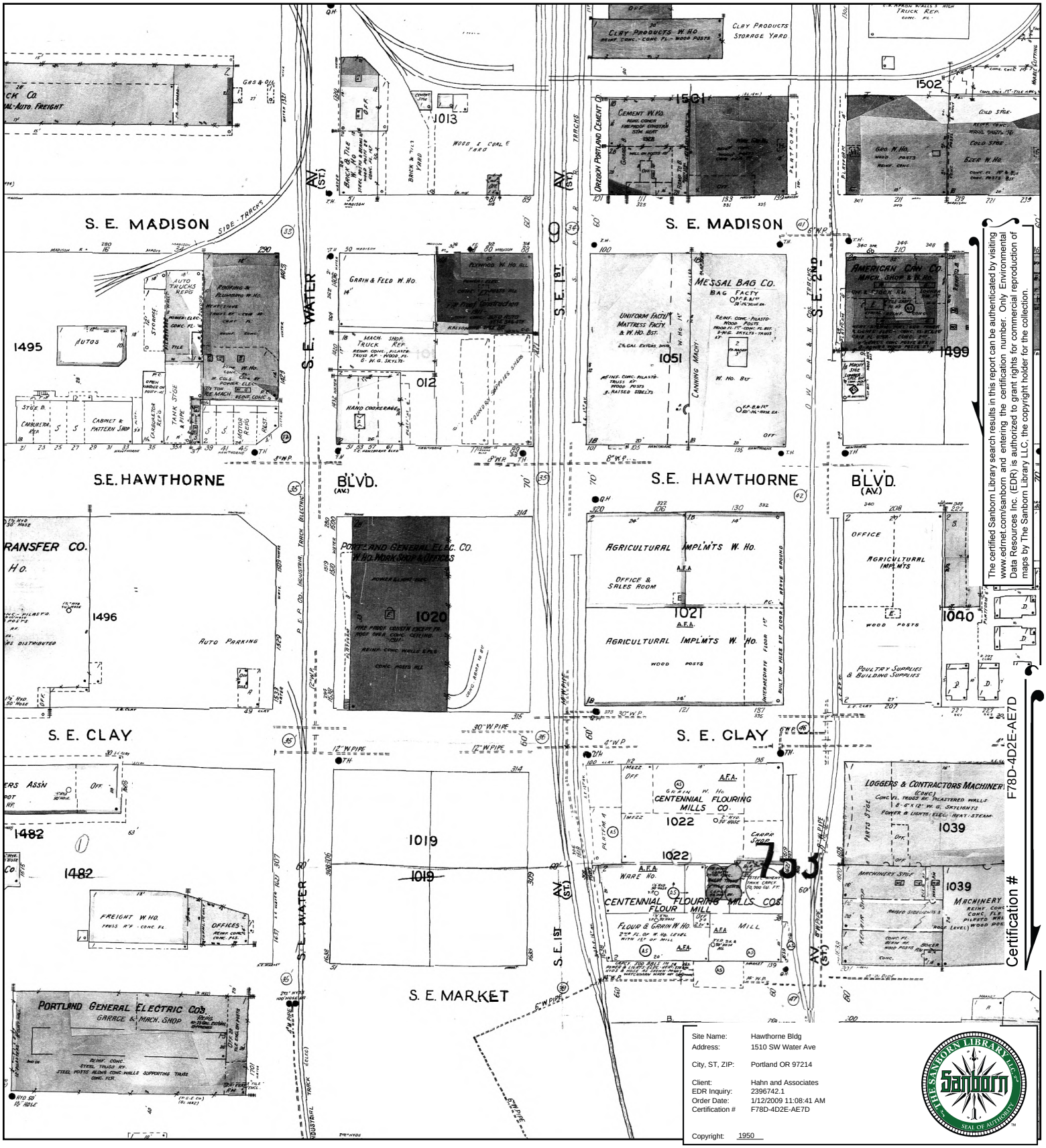
This Certified Sanborn Map combines the following sheets (thumbnails on page 3).



Volume 7, Sheet 740
Volume 7, Sheet 753
Volume 7, Sheet 754
Volume 7, Sheet 739

N

1950 Certified Sanborn Map



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Client:	Hahn and Associates
EDR Inquiry:	2396742.1
Order Date:	1/12/2009 11:08:41 AM
Certification #	F78D-4D2E-AE7D
Copyright:	1950

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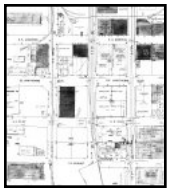
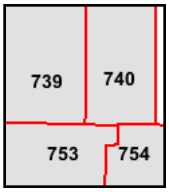
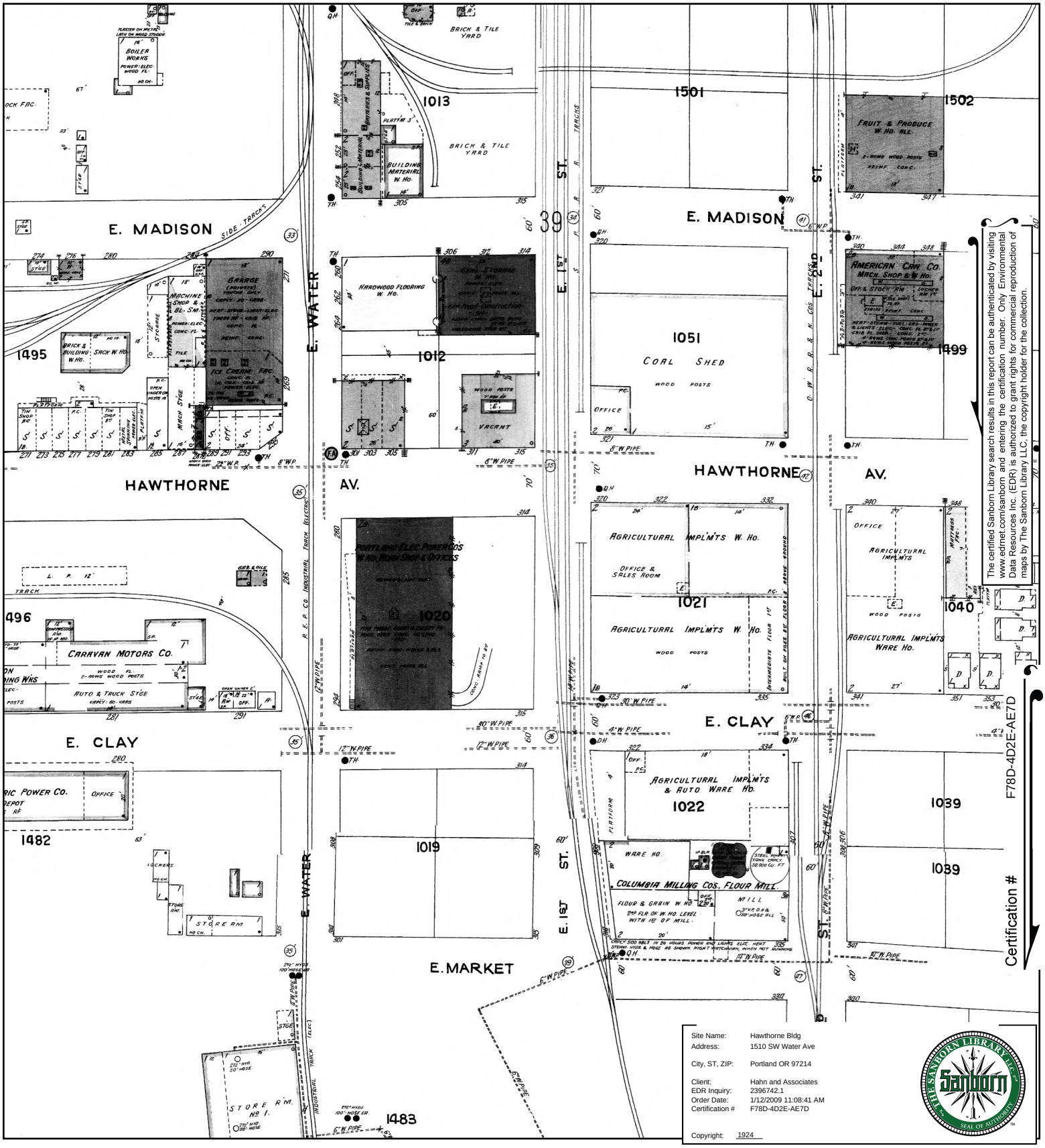




Volume 7, Sheet 739
Volume 7, Sheet 740
Volume 7, Sheet 753
Volume 7, Sheet 754

N

1924 Certified Sanborn Map



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Certification # F78D-4D2E-AE7D

Site Name:	Hawthorne Bldg
Address:	1510 SW Water Ave
City, ST, ZIP:	Portland OR 97214
Client:	Hahn and Associates
EDR Inquiry:	2396742.1
Order Date:	1/12/2009 11:08:41 AM
Certification #	F78D-4D2E-AE7D
Copyright:	1924

Map Key

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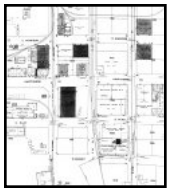
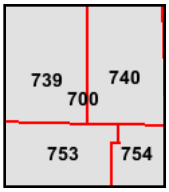
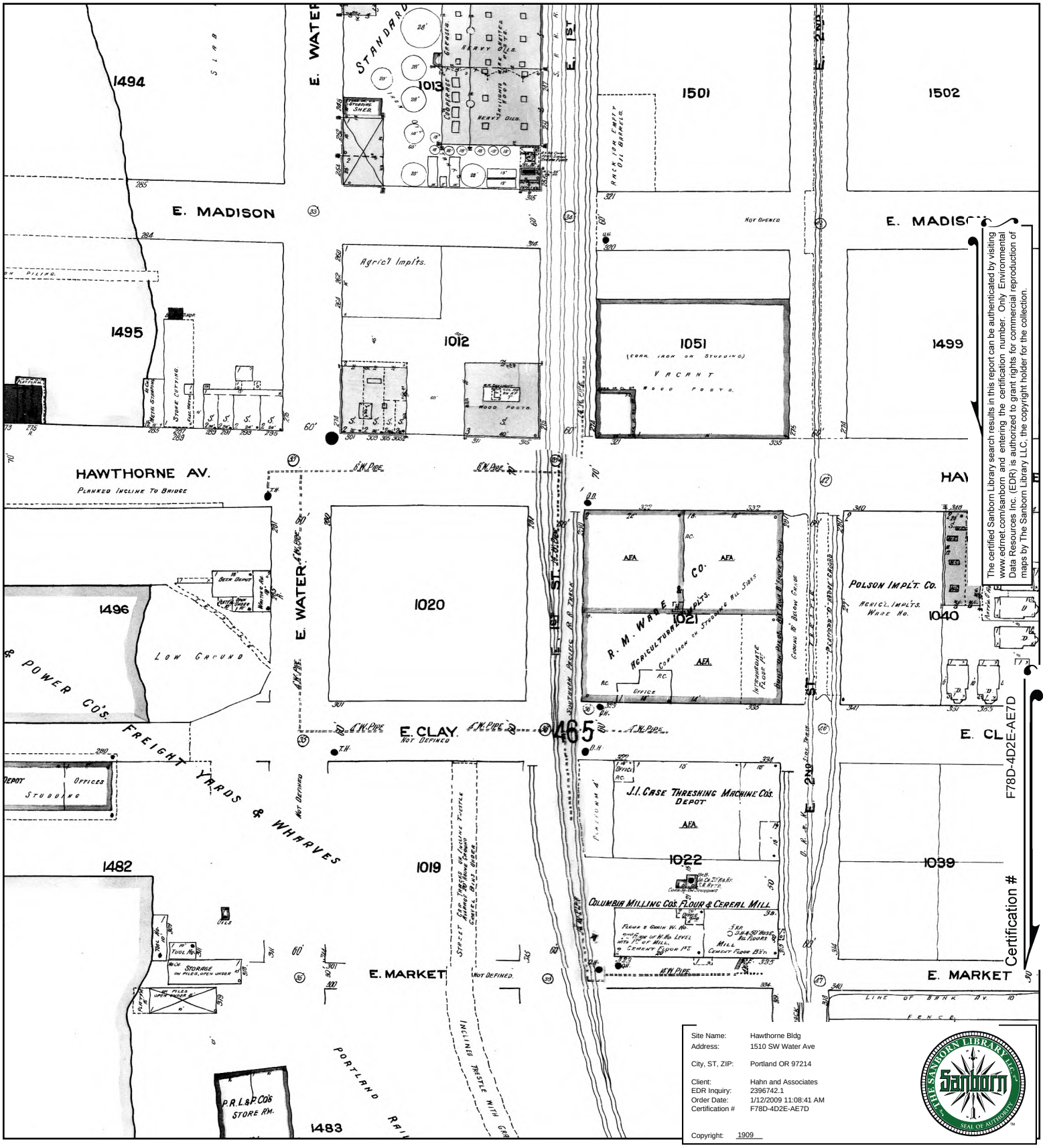




Volume 7, Sheet 700
Volume 7, Sheet 739
Volume 7, Sheet 740
Volume 7, Sheet 753
Volume 7, Sheet 754

N

1909 Certified Sanborn Map



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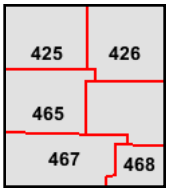
Client:	Hahn and Associates
EDR Inquiry:	2396742.1
Order Date:	1/12/2009 11:08:41 AM
Certification #	F78D-4D2E-AE7D
Copyright:	1909

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).



Volume 5, Sheet 465
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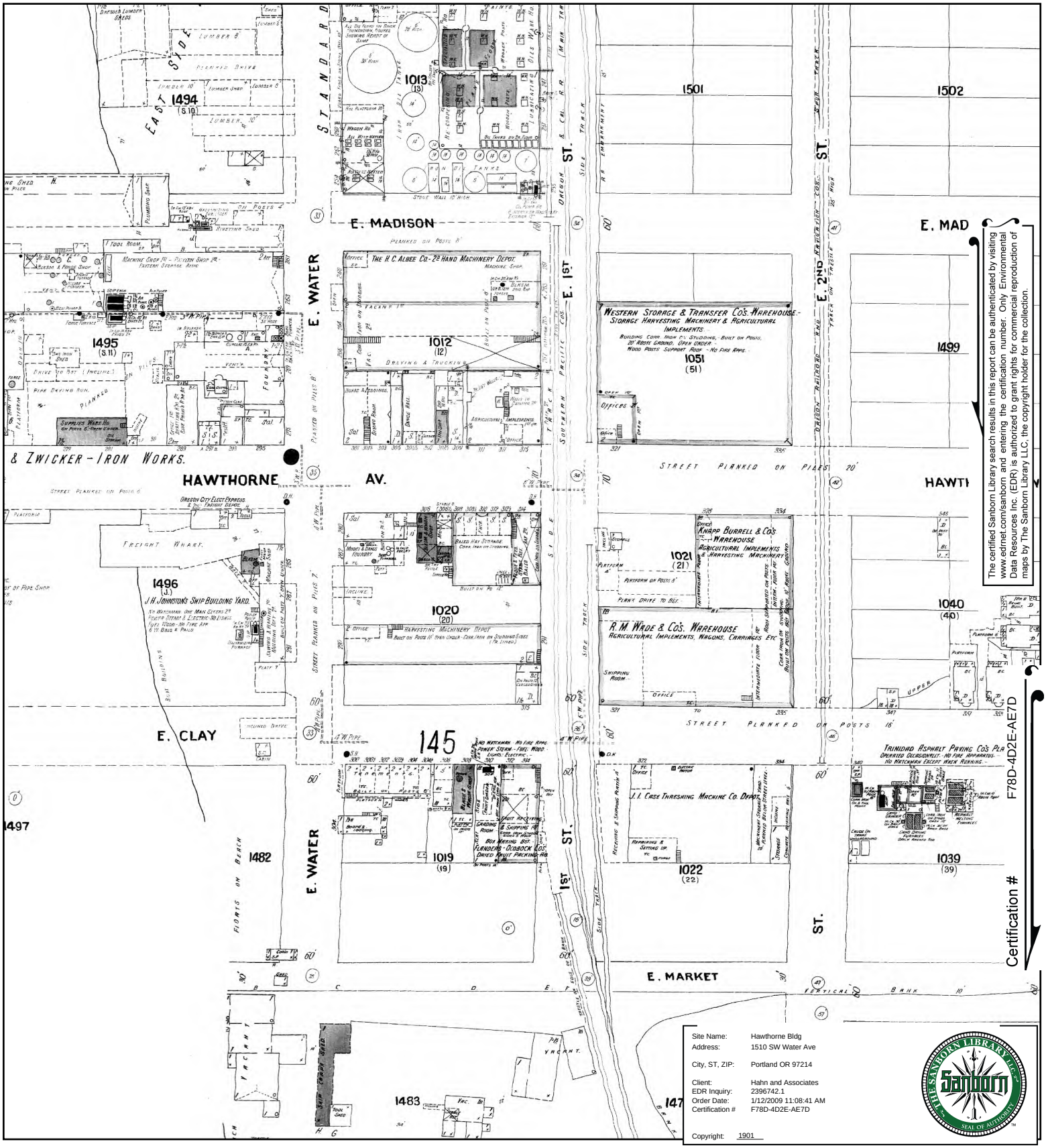
Volume 5, Sheet 468
Volume 4, Sheet 425
Volume 4, Sheet 426

N

1901 Certified Sanborn Map



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Site Name:	Hawthorne Bldg
Address:	1510 SW Water Ave
City, ST, ZIP:	Portland OR 97214
Client:	Hahn and Associates
EDR Inquiry:	2396742.1
Order Date:	1/12/2009 11:08:41 AM
Certification #	F78D-4D2E-AE7D
Copyright:	1901

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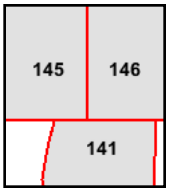
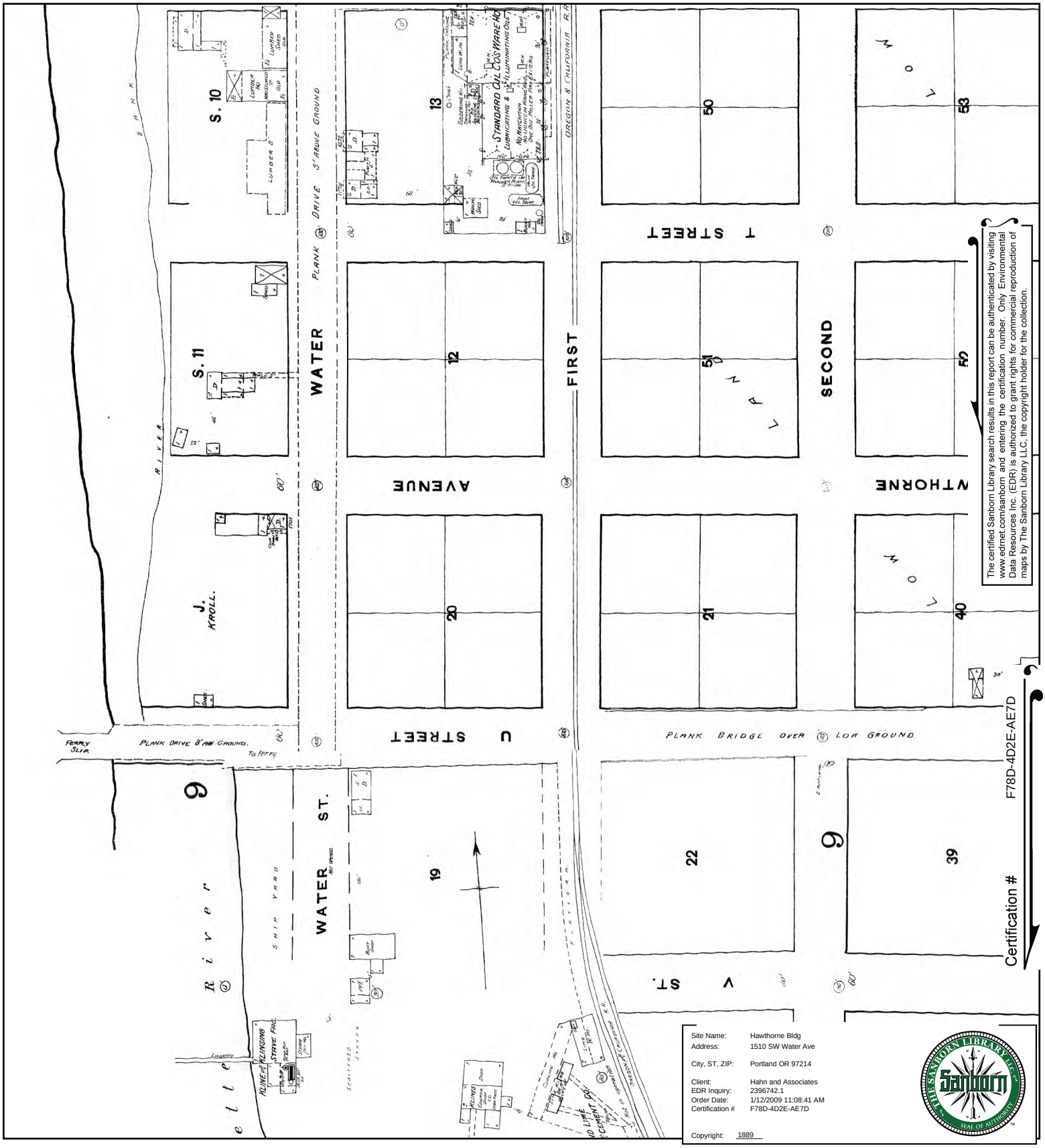


Volume 2, Sheet 141
Volume 2, Sheet 145
Volume 2, Sheet 146

N

1889 Certified Sanborn Map



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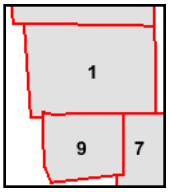

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Volume 2, Sheet 1
Volume 2, Sheet 7
Volume 2, Sheet 9

N

Sanborn Sheet Thumbnails

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

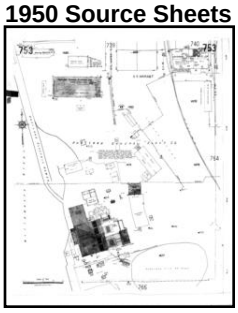
1969 Source Sheets

Volume 7, Sheet 753

Volume 7, Sheet 754

Volume 7, Sheet 765

1950 Source Sheets



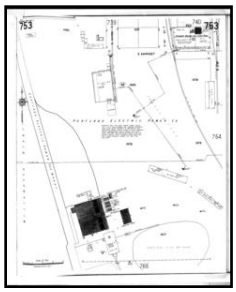
Volume 7, Sheet 753

Volume 7, Sheet 754

Volume 7, Sheet 765

1924 Source Sheets

Volume 7, Sheet 700



Volume 7, Sheet 753

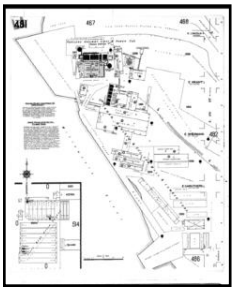
Volume 7, Sheet 754

Volume 7, Sheet 765

1909 Source Sheets

Volume 5, Sheet 467

Volume 5, Sheet 468



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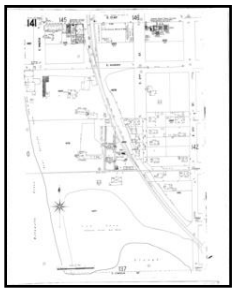
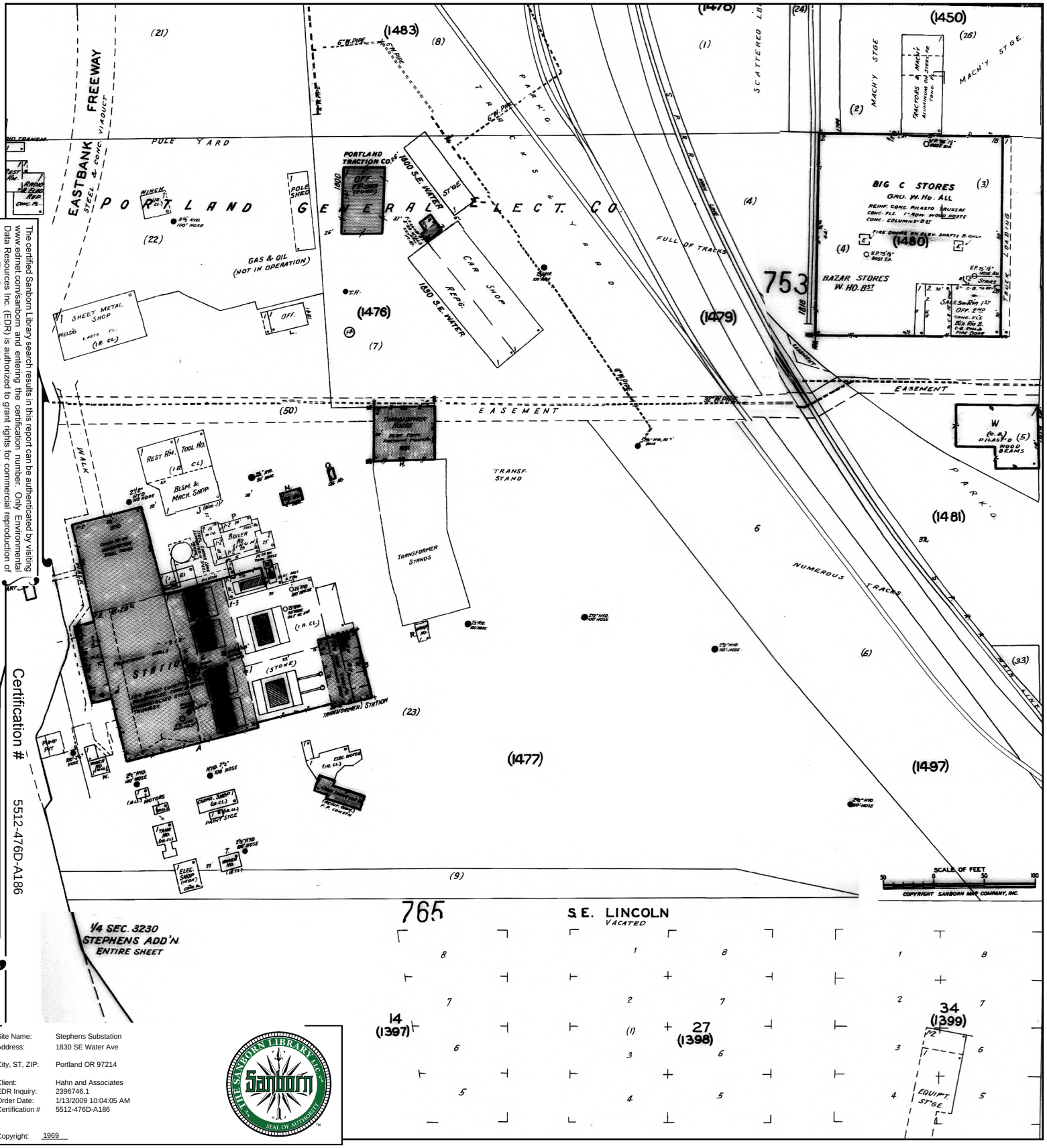
1901 Source Sheets

Volume 2, Sheet 137



Volume 2, Sheet 141

1969 Certified Sanborn Map



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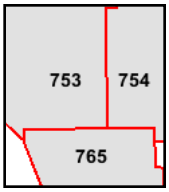
Certification # 5512-476D-A186

Site Name:	Stephens Substation
Address:	1830 SE Water Ave
City, ST, ZIP:	Portland OR 97214
Client:	Hahn and Associates
EDR Inquiry:	2396746.1
Order Date:	1/13/2009 10:04:05 AM
Certification #	5512-476D-A186
Copyright:	1969

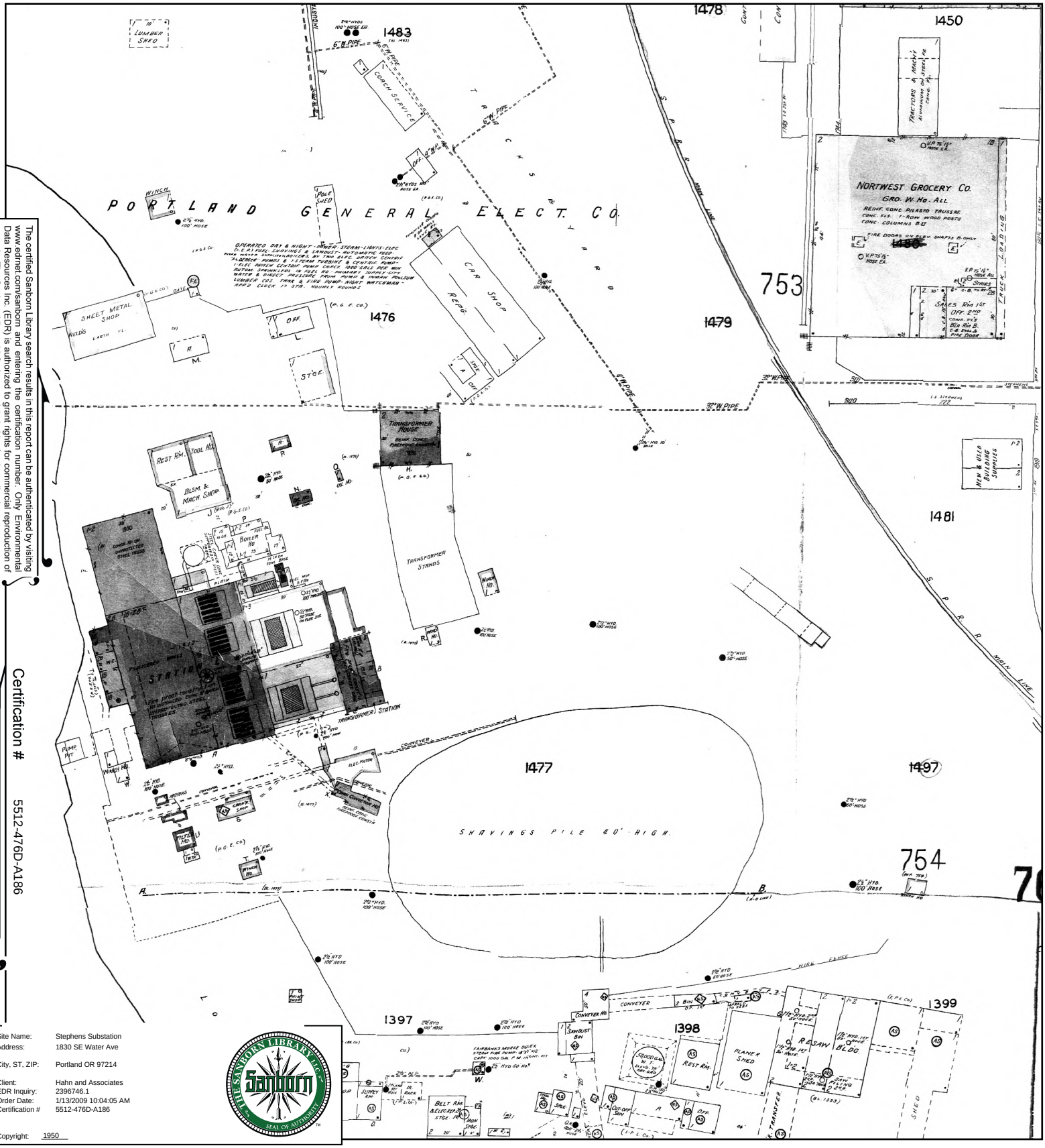
This Certified Sanborn Map combines the following sheets (thumbnails on page 3).



Volume 7, Sheet 753
Volume 7, Sheet 754
Volume 7, Sheet 765

N

1950 Certified Sanborn Map



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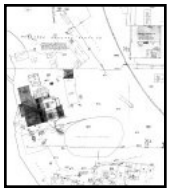
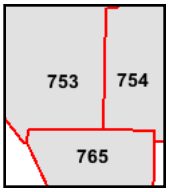
EDR Inquiry:	2396746.1
Order Date:	1/13/2009 10:04:05 AM
Certification #	5512-476D-A186

Copyright: 1950

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).

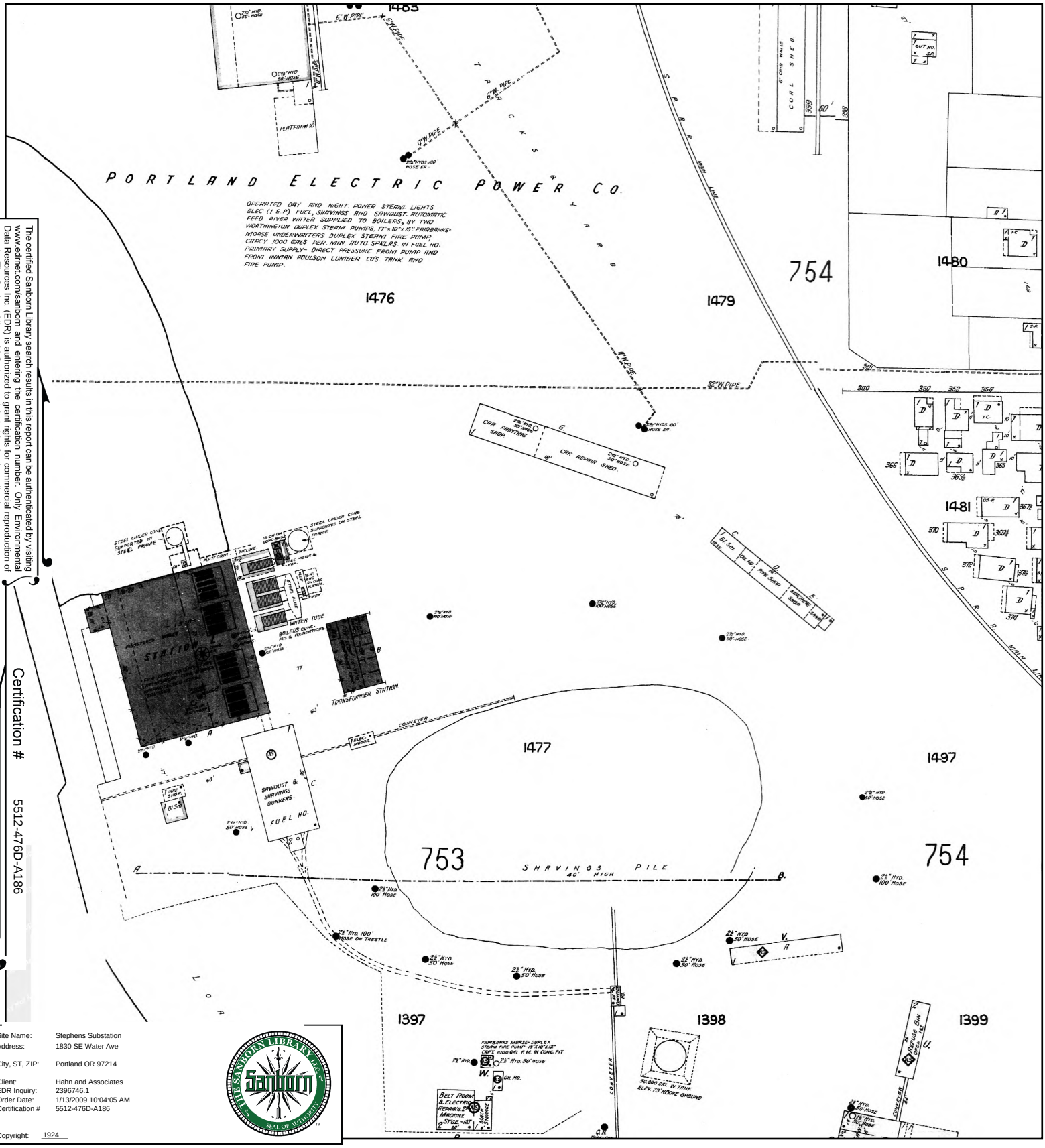




Volume 7, Sheet 753
Volume 7, Sheet 754
Volume 7, Sheet 765

N

1924 Certified Sanborn Map



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Certification # 5512-476D-A186

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EDR Inquiry:	2396746.1
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Certification #	5512-476D-A186

Copyright: 1924

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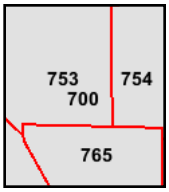
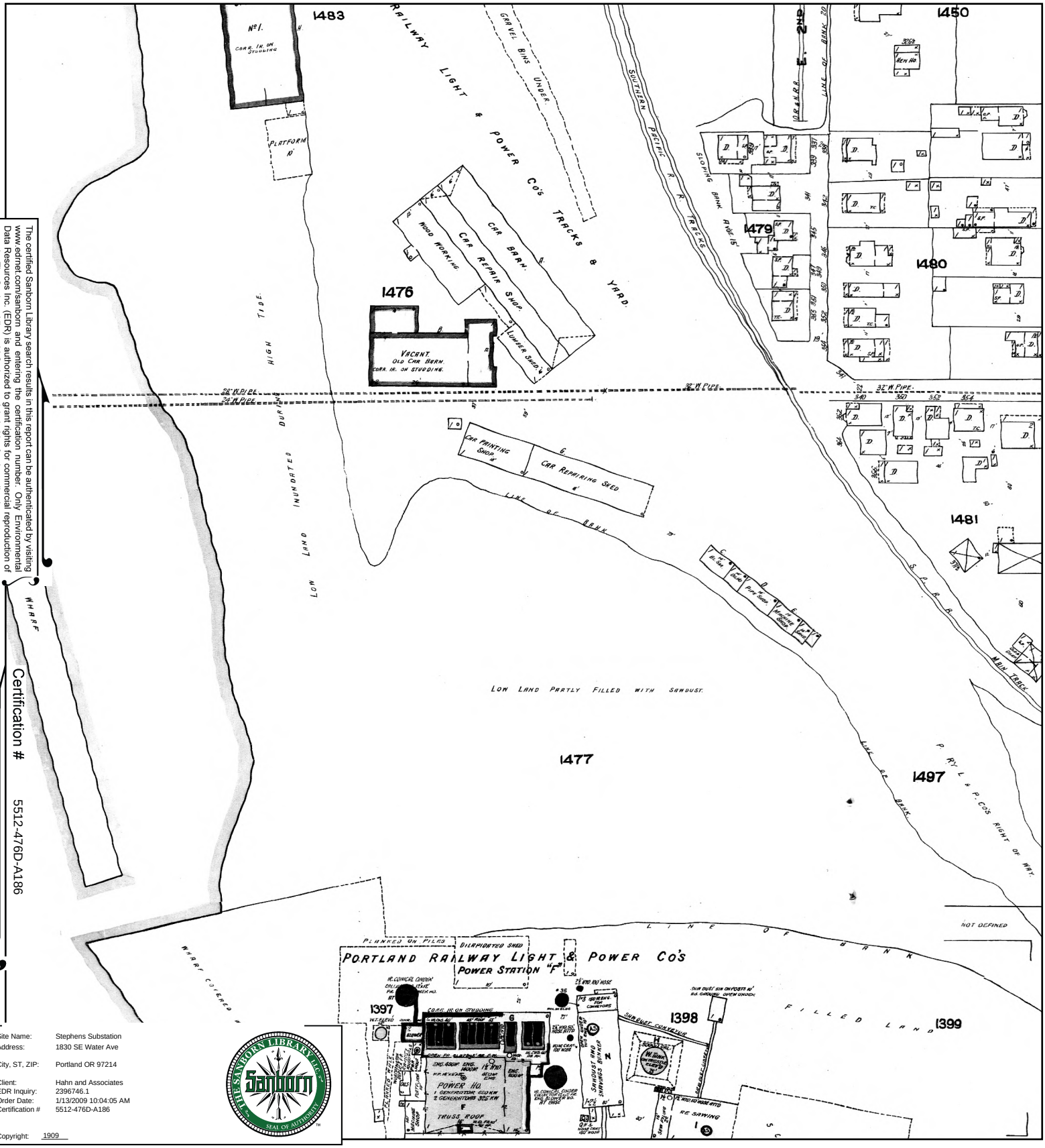


Volume 7, Sheet 700
Volume 7, Sheet 753
Volume 7, Sheet 754
Volume 7, Sheet 765

N

1909 Certified Sanborn Map



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Certification # 5512-476D-A186

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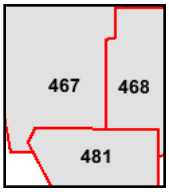
EDR Inquiry:	2396746.1
Order Date:	1/13/2009 10:04:05 AM
Certification #	5512-476D-A186
Copyright:	1909

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).



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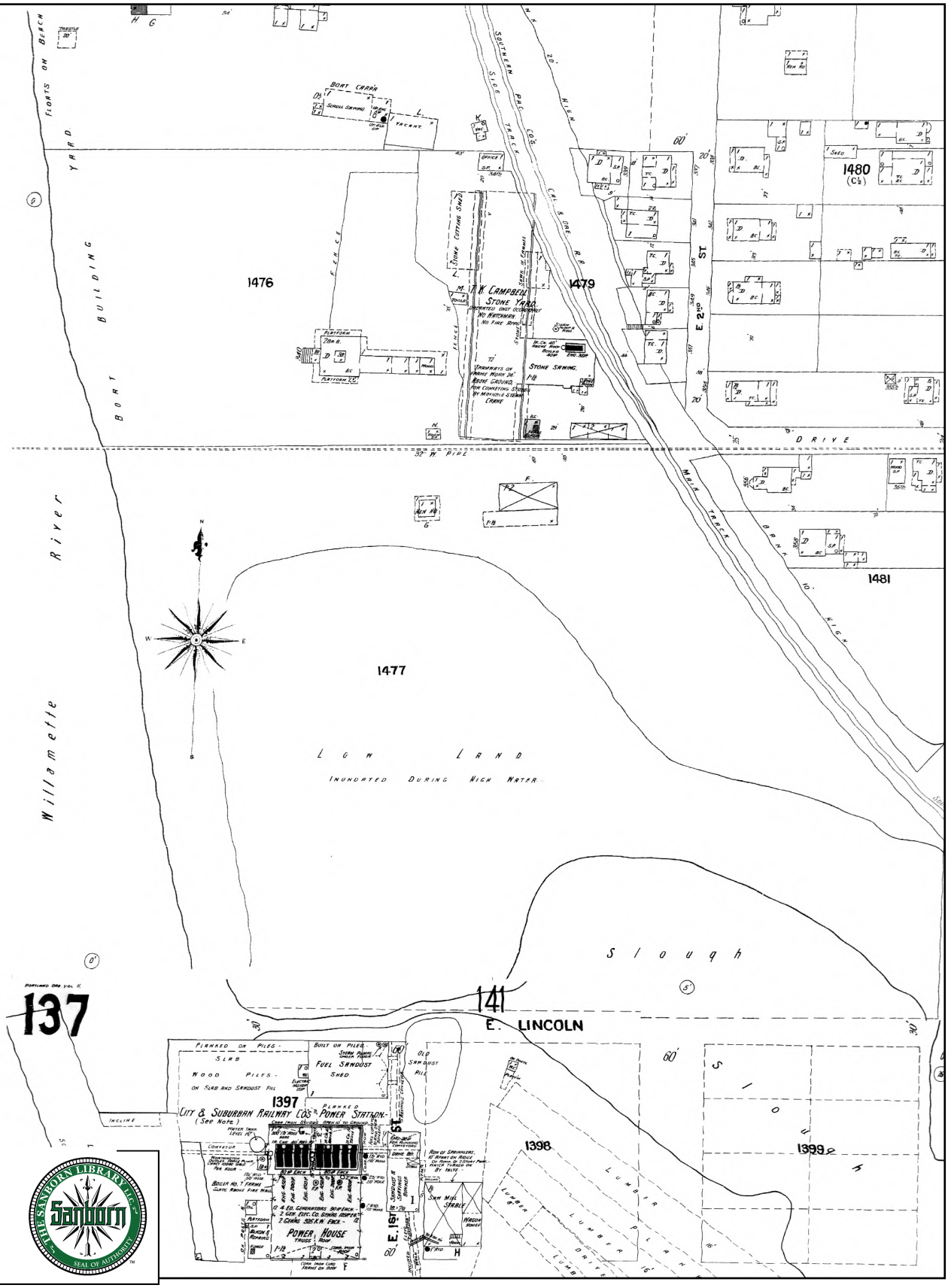
Volume 5, Sheet 468
Volume 5, Sheet 481

N

1901 Certified Sanborn Map



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Site Name:	Stephens Substation
Address:	1830 SE Water Ave
City, ST, ZIP:	Portland OR 97214
Client:	Hahn and Associates
EDR Inquiry:	2396746.1
Order Date:	1/13/2009 10:04:05 AM
Certification #	5512-476D-A186

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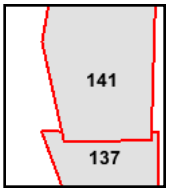
This Certified Sanborn Map combines the following sheets (thumbnails on page 3).



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Volume 2, Sheet 141

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1928-12-31 City of Portland Archive

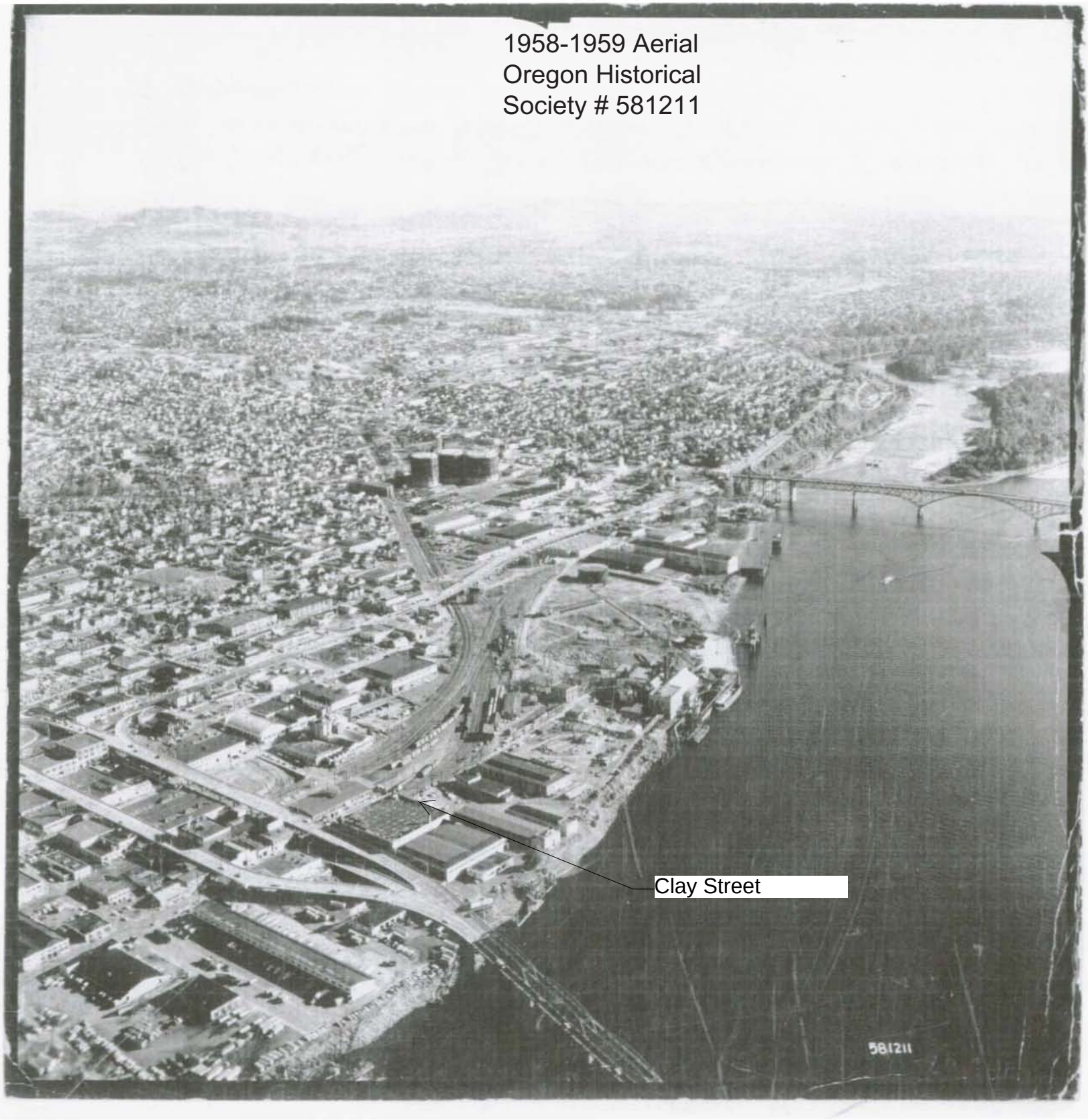
Fig. 66 Airplane view of City of Portland Business District showing completed project.

1936
University
of Oregon
Archive
Clay Street

Clay Street
1940
University of
Oregon Archive

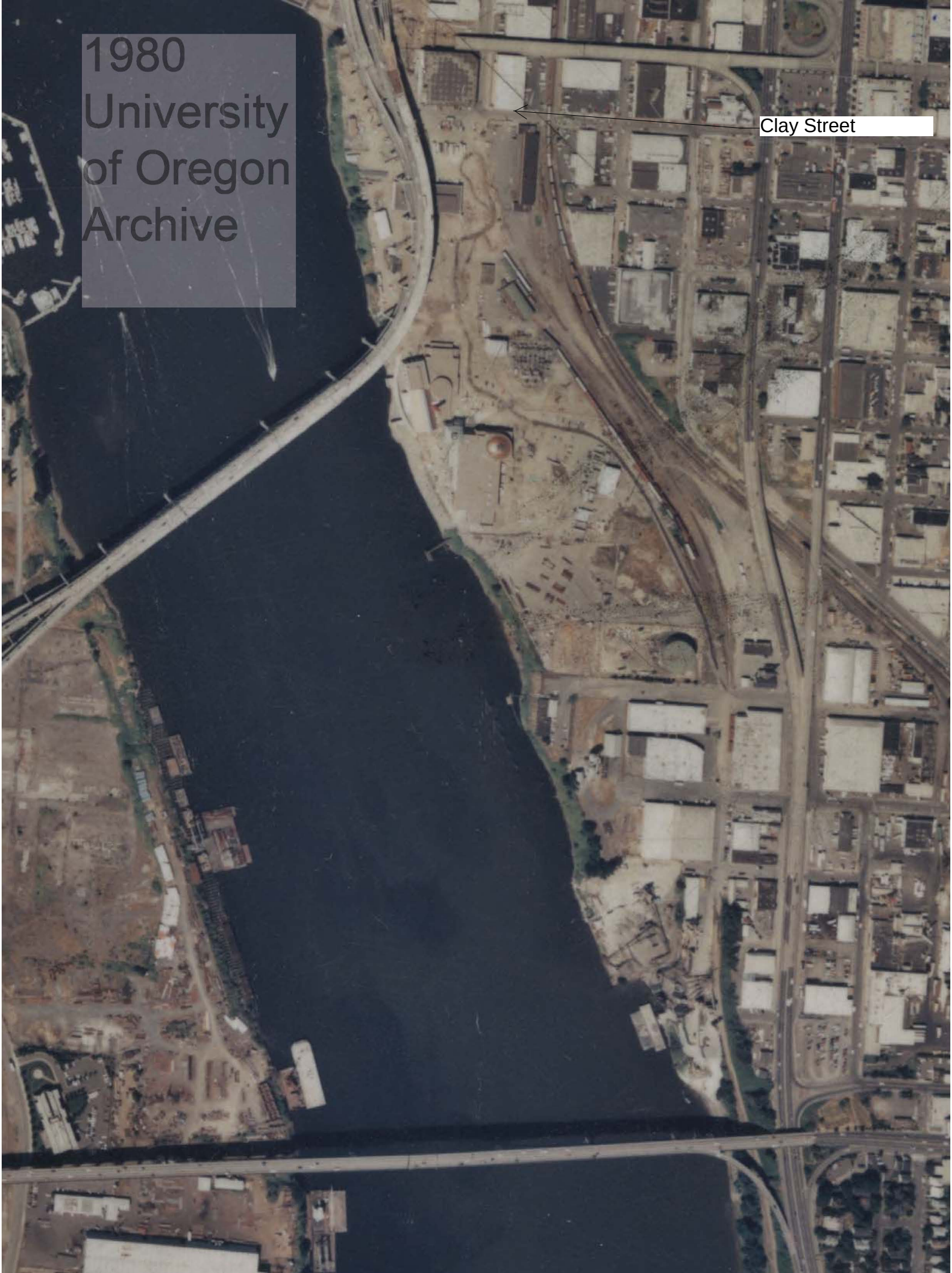
6/14/48 AERIAL VIEW FLOOD WATERS
East Side-Hawthorne, Morrison, Burnside &
City of Portland Archive Steel Bridges

1950-11-09 Aerial
of Southwest and
Southeast Portland
City of Portland
Archives
Clay Street


1958-1959 Aerial
Oregon Historical
Society # 581211
Clay Street
581211

Clay Street
1970-1975 Aerial
Oregon Historical
Society # 70479
67-GHE

1980
University
of Oregon
Archive



1980
University
of Oregon
Archive

1701 SE Water Street
1701 SE Water Street
Portland, OR 97214

Inquiry Number: 2595985.2s
September 21, 2009

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Block 1019

Oregon DEQ Facility Profiler 2.0

[Help] [Close Window]

Facility Summary Report

Return to Site Listing Print Report

Maps

Facility / Site Information for Location 23631

Facility/Site Name:	UNION PACIFIC RR - PORTLAND TRACTION CO	**Latitude:**	45° 30' 40.6799"
Address:	1640 SE WATER AVE	**Longitude:**	-122° 39' 49.68"
City State Zip:	PORTLAND OR 97214	**Location Accuracy:**	HIGH
		Last Updated:	12/22/1998 12:00:00 AM

Aliases

UNION PACIFIC RR PORTLAND TRACTION CO. LUST

Geographic Features

Township:	T1S-R1E-S2	**Congress Dist:**	3	**Forest Type:**	N/A
County:	MULTNOMAH	**OR Senate Dist:**	21	**Vegetation:**	Urban and industrial
Watershed:	LOWER WILLAMETTE	**OR House Dist:**	42	**Agricultural Land:**	PREDOM IRR
Drinking Water Source:		N/A			

Oregon DEQ Program Information

Leaking Underground Storage Tanks (LUST)

Log Number	Received	Cleanup Initiated	Cleanup Complete	Type	Heating Oil Tank	UST Facility ID	Status	Detail Information[1]
26-90-0438		11/13/1990		REGULATED		8313	CLEANUP_COMPLETED	LUST Site Report

[1] Linked reports may be unavailable from 9:00pm to 7:00am PST due to system maintenance.
[2] DEQ does not maintain air discharge permit information for Lane County.

More Information on this location

Oregon DEQ Neighborhood Info (by region/county)
See wells in the same Township Range Section from the Oregon Water Resources Department Well logs Application
See county's scanned assessor maps through ORMAP

[DEQ's Privacy Notice] [Contact DEQ] [Application Feedback]

Disclaimer: *This product is for informational purposes, and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.*

Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Log Nbr: **26-90-0438**

Basic Incident Information

Status: **CLOSED**

Site Name: UNION PACIFIC RR PORTLAND TRACTION CO.

Received Date: 7/26/1991

Address: 1640 SE WATER AVENUE

UST Facility Id: 8313

City: PORTLAND

Zip Code: 97214

County: MULTNOMAH

Site Type: Soil Matrix Cleanup

File Status:

Heating Oil Tank (HOT):

Regulated Tank: YES

Assessment Information

26-90-0438

Cause: UNKNOWN

Source: Not Reported

Discovery: DECOMMISSIONING

Media Effected
>Soil >GroundWater

Contaminants Released
>Deisel >HeatingOil

Free Product Removed:

Free Vapor Removed:

CAP Requested:

Delineate Groundwater:

Groundwater Delineated:

CAP Submitted:

Delineate Soil:

Soil Delineated:

CAP Approved:

Compliance Monitoring:

Management Information

26-90-0438

Release Stopped Date: 11/13/1990

Cleanup Start Date: 11/13/1990

Cleanup End Date: 3/5/1992

No Work Reported Information For This Incident

26-90-0438

This information may not reflect current status of site.
For further detail, refer to the DEQ Regional Office file.

This page last updated: January 9, 2006
DEQ Online is the official web site for the Oregon Department of Environmental Quality.

Block 1020

Oregon DEQ Facility Profiler 2.0

[Help] [Close Window]

Facility Summary Report

Return to Site Listing Print Report

Maps

Facility / Site Information for Location 2790

Facility/Site Name:	PORTLAND GENERAL ELECTRIC CO	**Latitude:**	45° 30' 44.0714"
Address:	1510 SE WATER AVE	**Longitude:**	-122° 39' 49.5108"
City State Zip:	PORTLAND OR 97214	**Location Accuracy:**	HIGH
		Last Updated:	3/31/1999 12:00:00 AM

Aliases

Portland General Electric Co Corporate S	HazWaste	Portland General Electric Hawthorne Bldg	HazWaste

Geographic Features

Township:	T1S-R1E-S2	**Congress Dist:**	3	**Forest Type:**	N/A
County:	MULTNOMAH	**OR Senate Dist:**	21	**Vegetation:**	Urban and industrial
Watershed:	LOWER WILLAMETTE	**OR House Dist:**	42	**Agricultural Land:**	PREDOM IRR
Drinking Water Source:		N/A			

Oregon DEQ Program Information

Hazardous Waste (HazWaste)

Identifier	Start Date	Effective Date	Review Date	NFA Date	Type	Sub Type	Detail Information[1]	EPA Number
4823	03/02/1992	12/31/2008			Generator	CEG	HW Site Report	ORD981763923

SIC CODE	SIC Description	PRIMARY
4911	ELECTRIC SERVICES	N

[1] Linked reports may be unavailable from 9:00pm to 7:00am PST due to system maintenance.
[2] DEQ does not maintain air discharge permit information for Lane County.

More Information on this location

Oregon DEQ Neighborhood Info (by region/county)
See wells in the same Township Range Section from the Oregon Water Resources Department Well logs Application
See county's scanned assessor maps through ORMAP

[DEQ's Privacy Notice] [Contact DEQ] [Application Feedback]

Disclaimer: *This product is for informational purposes, and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.*

Oregon DEQ Hazardous Waste Site Report

[Close Report]

EPA ID: ORD981763923 *Active*

Common Name: Portland General Electric Hawthorne Bldg

Employee count: 55 **Activity Start:** 3/2/1992

Location: 1510 SE WATER AVE
PORTLAND OR 97214
MULTNOMAH County

Latitude: 45.5122 45° 30' 44.0714" **Longitude:** -122.6637 -122° 39' 49.5108"

SIC Codes: 4911 - ELECTRIC SERVICES

Facility is a Hazardous Waste Generator
Current Status: CEG as of 12/31/2007

Hazardous Waste Generation Reporting History

Report Year	Generator Status	Number of Waste Streams	Tons Generated	Sent Date	Received Date
2007	CEG	0		12/11/2007	02/28/2008
2003	CEG	0		12/30/2003	03/15/2004
2002	CEG	0		12/24/2002	02/28/2003
2001	CEG	0		12/26/2001	02/26/2002
2000	CEG	0		01/05/2001	03/05/2001
1999	CEG	0		01/06/2000	03/14/2000
1998	CEG	0		01/15/1999	03/08/1999
1997	CEG	0		12/29/1997	02/24/1998
1996	CEG	0		12/30/1996	02/28/1997
1995	CEG	0		12/27/1995	02/28/1996
1994	CEG	0		12/30/1994	02/27/1995
1993	LQG	3	2.66	12/30/1993	03/01/1994

Waste Stream: Safety Kleen recycled solvents used for parts cleaning **Source:** Flush rinsing

Waste Codes: D001, D018, D039 **CAS Codes:**

Form: Halogenated/nonhalogenated solvent mixture

Reported: 1260.00 LB = 573.00 KG **Managed Onsite:** 0.00 KG

Shipments:

02/08/1993	22217	ORD981766124	154.00 LB	Other solvent recovery
03/22/1993	13606	ORD981766124	154.00 LB	Other solvent recovery
05/05/1993	09678	ORD981766124	161.00 LB	Other solvent recovery
06/14/1993	00804	ORD981766124	154.00 LB	Other solvent recovery
07/29/1993	95001	ORD981766124	161.00 LB	Other solvent recovery
09/07/1993	83031	ORD981766124	161.00 LB	Other solvent recovery
10/18/1993	73909	ORD981766124	161.00 LB	Other solvent recovery
11/29/1993	58647	ORD981766124	154.00 LB	Other solvent recovery

Waste Stream: Hazardous waste liquid from sump cleaning **Source:** Cleanup of spill residues

Waste Codes: D004, D005, D007, D008 **CAS Codes:**

Form: Halogenated/nonhalogenated solvent mixture

Reported: 2754.00 LB = 1252.00 KG **Managed Onsite:** 0.00 KG

Shipments:

09/14/1993	06663	WAD092300250	2754.00 LB	Incineration-liquids

Waste Stream: Environmentallly hazardous substance, liquid which was generated as rinse w **Source:** Sludge removal

Waste Codes: D004, D005, D007, D008 **CAS Codes:**

Form: Halogenated/nonhalogenated solvent mixture

Reported: 1836.00 LB = 835.00 KG **Managed Onsite:** 0.00 KG

Shipments:

09/14/1993	06663	WAD092300250	1836.00 LB	Management method unknown

1992 SQG 3 0.838 12/29/1992 02/26/1993

Waste Stream: Safety Kleen recycled solvents used for parts cleaning **Source:** Flush rinsing

Waste Codes: D001, D018, D039 **CAS Codes:**

Form: Halogenated/nonhalogenated solvent mixture

Reported: 1003.00 LB = 456.00 KG **Managed Onsite:** 0.00 KG

Shipments:

01/31/1992	45732	ORD000712067	262.00 LB	Fractionation/distillation
04/27/1992	71380	ORD000712067	262.00 LB	Fractionation/distillation
07/14/1992	64418	ORD000712067	262.00 LB	Fractionation/distillation
10/07/1992	58111	ORD000712067	86.00 LB	Fractionation/distillation
11/17/1992	08189	ORD981766124	131.00 LB	Other solvent recovery

Waste Stream: Corrosive liquid from hot stripping tank (sodium hydroxide solution with me **Source:** Stripping

Waste Codes: D002, D006, D007, D008 **CAS Codes:**

Form: Caustic solution with metals but no cyanides

Reported: 459.00 LB = 209.00 KG **Managed Onsite:** 0.00 KG

Shipments:

12/30/1992	92612	ORD089452353	459.00 LB	Stabilization/chemical fixation using cementitious and /or pozzolanic

Waste Stream: Waste flammable liquids unused products for disposal **Source:** Stripping

Waste Codes: D001, F001, F003 **CAS Codes:**

Form: Caustic solution with metals but no cyanides

Reported: 380.00 LB = 173.00 KG **Managed Onsite:** 0.00 KG

Shipments:

12/07/1992	92144	WAD981769110	380.00 LB	Fuel blending

1991 SQG 1 0.454 11/01/1991 03/02/1992

Waste Stream: SAFETY-KLEEN PETROLEUM NAPHTHA PARTS CLEANER **Source:** Flush rinsing

Waste Codes: D001, D018, D039 **CAS Codes:**

Form: Nonhalogenated solvent

Reported: 998.00 LB = 454.00 KG

Managed Onsite: 0.00 KG

Shipments:

11/06/1991	77971	ORD000712067	302.00 LB	Fractionation/distillation
02/28/1991	30321	ORD092895481	262.00 LB	Fractionation/distillation
05/21/1991	66294	ORD092895481	172.00 LB	Fractionation/distillation
08/20/1991	19841	ORD092895481	262.00 LB	Fractionation/distillation

Block 1021

Oregon DEQ Facility Profiler 2.0

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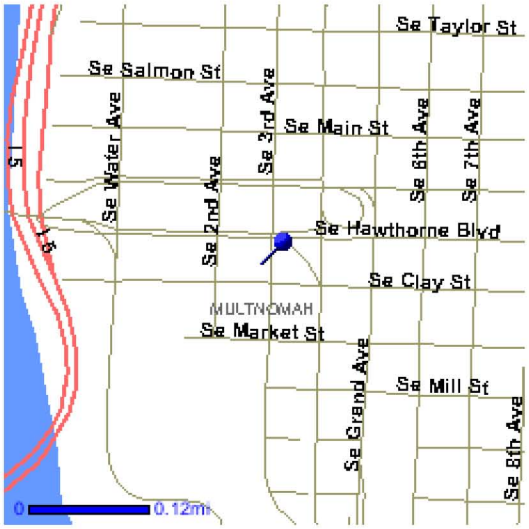
Facility Summary Report

Return to Site Listing Print Report

Maps



Facility / Site Information for Location 1607

Facility/Site Name:	SPEEDS AUTO SERVICE GROUP INC	**Latitude:**	45° 30' 42.5184"
Address:	125 SE CLAY ST	**Longitude:**	-122° 39' 46.3015"
City State Zip:	PORTLAND OR 97214	**Location Accuracy:**	HIGH
		Last Updated:	9/25/2000 12:00:00 AM

Aliases

Auto Adventure Inc	HazWaste	Speeds Enterprises Inc	HazWaste

Geographic Features

Township:	T1S-R1E-S2	**Congress Dist:**	3	**Forest Type:**	N/A
County:	MULTNOMAH	**OR Senate Dist:**	21	**Vegetation:**	Urban and industrial
Watershed:	LOWER WILLAMETTE	**OR House Dist:**	42	**Agricultural Land:**	PREDOM IRR
Drinking Water Source:		N/A			

Oregon DEQ Program Information

Hazardous Waste (HazWaste)

Identifier	Start Date	Effective Date	Review Date	NFA Date	Type	Sub Type	Detail Information[1]	EPA Number
2696	04/01/1992	12/31/2003			Generator	CEG	HW Site Report	ORD987197332

SIC CODE	SIC Description	PRIMARY
5999	MICS RETAIL STORES, NEC	N

[1] Linked reports may be unavailable from 9:00pm to 7:00am PST due to system maintenance.
[2] DEQ does not maintain air discharge permit information for Lane County.

More Information on this location

Oregon DEQ Neighborhood Info (by region/county)
See wells in the same Township Range Section from the Oregon Water Resources Department Well logs Application
See county's scanned assessor maps through ORMAP

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Oregon DEQ Hazardous Waste Site Report

[Close Report]

EPA ID: ORD987197332 *Active*

Common Name: Auto Adventure Inc

Employee count: 10 **Activity Start:** 4/1/1992

Location: 125 SE CLAY ST
PORTLAND OR 97214
MULTNOMAH County

Latitude: 45.5118 45° 30' 42.5184" **Longitude:** -122.6628 -122° 39' 46.3015"

SIC Codes: 5999 - MICS RETAIL STORES, NEC

Facility is a Hazardous Waste Generator
Current Status: CEG as of 12/31/2003

Hazardous Waste Generation Reporting History

Report Year	Generator Status	Number of Waste Streams	Tons Generated	Sent Date	Received Date
2003	CEG	0		12/24/2003	03/16/2004
2002	CEG	0		12/24/2002	01/06/2003
2001	CEG	0		12/26/2001	01/04/2002
2000	CEG	0		01/05/2001	01/16/2001
1999	CEG	0		01/06/2000	01/12/2000
1998	CEG	0		01/15/1999	04/14/1999
1997	CEG	0		12/29/1997	02/11/1998
1997	CEG	0		12/29/1997	02/11/1998
1996	CEG	0		12/30/1996	01/06/1997
1995	CEG	0		12/27/1995	02/07/1996
1994	CEG	0		12/30/1994	03/01/1995
1993	CEG	0		12/30/1993	01/07/1994
1992		0		12/29/1992	02/25/1993
1991	CEG	0		11/01/1991	04/01/1992

Block 1022

Oregon DEQ Facility Profiler 2.0

[Help] [Close Window]

Facility Summary Report

Return to Site Listing Print Report

Maps

Facility / Site Information for Location 1625

Facility/Site Name:	SPEEDS AUTO SERVICE GROUP INC	**Latitude:**	45° 30' 40.5749"
Address:	120 SE CLAY ST	**Longitude:**	-122° 39' 46.441"
City State Zip:	PORTLAND OR 97214	**Location Accuracy:**	HIGH
		Last Updated:	9/25/2000 12:00:00 AM

Aliases

Speeds Auto Service Group Inc	HazWaste	SPEEDS AUTOMOTIVE	LUST
Speeds Enterprises Inc	HazWaste		

Geographic Features

Township:	T1S-R1E-S2	**Congress Dist:**	3	**Forest Type:**	N/A
County:	MULTNOMAH	**OR Senate Dist:**	21	**Vegetation:**	Urban and industrial
Watershed:	LOWER WILLAMETTE	**OR House Dist:**	42	**Agricultural Land:**	PREDOM IRR
Drinking Water Source:		N/A			

Oregon DEQ Program Information

Leaking Underground Storage Tanks (LUST)

Log Number	Received	Cleanup Initiated	Cleanup Complete	Type	Heating Oil Tank	UST Facility ID	Status	Detail Information[1]
26-97-0486		06/26/1997		REGULATED		5349	CLEANUP_COMPLETED	LUST Site Report

Hazardous Waste (HazWaste)

Identifier	Start Date	Effective Date	Review Date	NFA Date	Type	Sub Type	Detail Information[1]	EPA Number
2468	04/01/1992	12/31/2003			Generator	CEG	HW Site Report	ORD987198330

SIC CODE	SIC Description	PRIMARY
7539	OTHER AUTOMOTIVE REPAIR SHOPS	N

[1] Linked reports may be unavailable from 9:00pm to 7:00am PST due to system maintenance.
[2] DEQ does not maintain air discharge permit information for Lane County.

More Information on this location

Oregon DEQ Neighborhood Info (by region/county)
See wells in the same Township Range Section from the Oregon Water Resources Department Well logs Application
See county's scanned assessor maps through ORMAP

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Oregon DEQ Hazardous Waste Site Report

[Close Report]

EPA ID: ORD987198330 *Active*

Common Name: Speeds Auto Service Group Inc

Employee count: 9 **Activity Start:** 4/1/1992

Location: 120 SE CLAY ST
PORTLAND OR 97214
MULTNOMAH County

Latitude: 45.5112 45° 30' 40.5749" **Longitude:** -122.6629 -122° 39' 46.4410"

SIC Codes: 7539 - OTHER AUTOMOTIVE REPAIR SHOPS

Facility is a Hazardous Waste Generator
Current Status: CEG as of 12/31/2003

Hazardous Waste Generation Reporting History

Report Year	Generator Status	Number of Waste Streams	Tons Generated	Sent Date	Received Date
2003	CEG	0		12/24/2003	03/16/2004
2002	CEG	0		12/24/2002	01/17/2003
2001	CEG	0		12/26/2001	12/28/2001
2000	CEG	0		01/05/2001	01/16/2001
1999	CEG	0		01/06/2000	01/11/2000
1998	CEG	0		01/15/1999	01/28/1999
1997	CEG	0		12/29/1997	02/11/1998
1997	CEG	0		12/29/1997	02/11/1998
1996	CEG	0		12/30/1996	01/06/1997
1995	CEG	0		12/27/1995	02/07/1996
1994	CEG	0		12/30/1994	02/27/1995
1993	CEG	0		12/30/1993	01/07/1994
1992	CEG	0		12/29/1992	04/15/1993
1991	CEG	0		11/01/1991	04/01/1992

Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-97-0486**
Status: **CLOSED**
Site Name: SPEEDS AUTOMOTIVE
Received Date: 6/26/1997
Address: 120 SE CLAY
UST Facility Id: 5349
City: PORTLAND
Zip Code: 97214
County: MULTNOMAH
Site Type: Soil Matrix Cleanup
File Status:
Heating Oil Tank (HOT):
Regulated Tank: YES

Assessment Information

26-97-0486

Cause: UNKNOWN
Source: Not Reported
Discovery: DECOMMISSIONING

Media Effected
>Soil

Contaminants Released
>Waste Oil

Free Product Removed:
Free Vapor Removed:
CAP Requested:
Delineate Groundwater:
Groundwater Delineated:
CAP Submitted:
Delineate Soil: YES
Soil Delineated:
CAP Approved:
Compliance Monitoring:

Management Information

26-97-0486

Release Stopped Date: 6/25/1997
Cleanup Start Date: 6/26/1997
Cleanup End Date: 1/12/2000

Work Reported Information

26-97-0486

Work Reported	Reported By	Reported Date
Tank Decommissioning	Data Conversion 2006	9/10/1997

This information may not reflect current status of site.
For further detail, refer to the DEQ Regional Office file.

This page last updated: January 9, 2006
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Block 1040

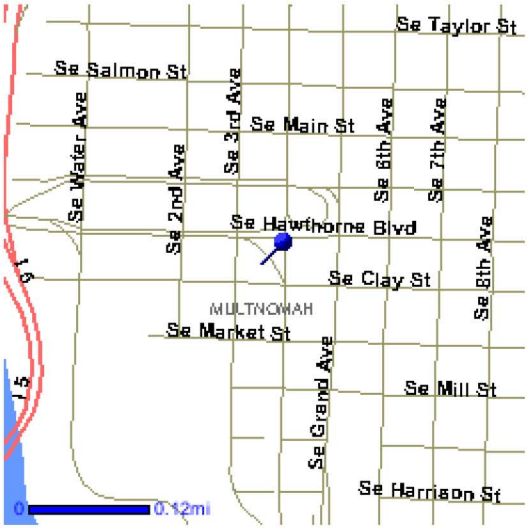
Oregon DEQ Facility Profiler 2.0

[Help] [Close Window]

Facility Summary Report

Return to Site Listing Print Report

Maps



Facility / Site Information for Location 27290

Facility/Site Name:	ROSE EQUIPMENT & SUPPLY INC HOT	**Latitude:**	45° 30' 42.48"
Address:	201 SE CLAY	**Longitude:**	-122° 39' 43.56"
City State Zip:	PORTLAND OR 97214	**Location Accuracy:**	HIGH
		Last Updated:	12/22/1998 12:00:00 AM

Aliases

ROSE EQUIPMENT & SUPPLY INC HOT LUST

Geographic Features

Township:	T1S-R1E-S2	**Congress Dist:**	3	**Forest Type:**	N/A
County:	MULTNOMAH	**OR Senate Dist:**	21	**Vegetation:**	Urban and industrial
Watershed:	LOWER WILLAMETTE	**OR House Dist:**	42	**Agricultural Land:**	PREDOM IRR
Drinking Water Source:		N/A			

Oregon DEQ Program Information

Leaking Underground Storage Tanks (LUST)

Log Number	Received	Cleanup Initiated	Cleanup Complete	Type	Heating Oil Tank	UST Facility ID	Status	Detail Information[1]
26-95-0342		12/19/1995		NON_REGULATED	HEATING_OIL_TANK		CLEANUP_COMPLETED	LUST Site Report

[1] Linked reports may be unavailable from 9:00pm to 7:00am PST due to system maintenance.
[2] DEQ does not maintain air discharge permit information for Lane County.

More Information on this location

Oregon DEQ Neighborhood Info (by region/county)
See wells in the same Township Range Section from the Oregon Water Resources Department Well logs Application
See county's scanned assessor maps through ORMAP

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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-95-0342**
Status: **CLOSED**
Site Name: HEATING OIL TANK
Received Date: 12/19/1995
Address: 201 SE CLAY
City: PORTLAND
Zip Code: 97214
County: MULTNOMAH
Site Type: Soil Matrix Cleanup
File Status:
Heating Oil Tank (HOT): YES
Regulated Tank:

Assessment Information

26-95-0342

Cause: NOT REPORTED
Source: Tank
Discovery: SITE ASSESSMENT

Media Effected
>Soil

Contaminants Released
>HeatingOil

Free Product Removed:
Free Vapor Removed:
CAP Requested:
Delineate Groundwater:
Groundwater Delineated:
CAP Submitted:
Delineate Soil:
Soil Delineated:
CAP Approved:
Compliance Monitoring:

Management Information

26-95-0342

Release Stopped Date: 12/19/1995
Cleanup Start Date: 12/19/1995
Cleanup End Date: 2/21/1996

Work Reported Information

26-95-0342

Work Reported	Reported By	Reported Date
Tank Decommissioning	Data Conversion 2006	2/13/1996

This information may not reflect current status of site.
For further detail, refer to the DEQ Regional Office file.

This page last updated: January 9, 2006
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Block 1496

Oregon DEQ Facility Profiler 2.0

[Help] [Close Window]

Facility Summary Report

Return to Site Listing Print Report

Maps

Facility / Site Information for Location 86427

Facility/Site Name:	HOMAN BUILDING	**Latitude:**	45° 30' 42.1"
Address:	49 SE CLAY ST	**Longitude:**	-122° 39' 58"
City State Zip:	PORTLAND OR 97214	**Location Accuracy:**	HIGH
		Last Updated:	4/20/2006 2:17:00 PM

Aliases

Holman Building ECSI

Geographic Features

Township:	T1S-R1E-S2	**Congress Dist:**	3	**Forest Type:**	N/A
County:	MULTNOMAH	**OR Senate Dist:**	21	**Vegetation:**	Urban and industrial
Watershed:	LOWER WILLAMETTE	**OR House Dist:**	42	**Agricultural Land:**	PREDOM IRR
Drinking Water Source:		N/A			

Oregon DEQ Program Information

Environmental Cleanup (ECSI)

Operation ID	Start Date	NFA Date	Permit Type	Permit SubType	Status	Detail Information[1]	EPA Number
4236	10/26/2004	01/06/2005	Contaminated Site		No further action required	ECSI Site Report	

[1] Linked reports may be unavailable from 9:00pm to 7:00am PST due to system maintenance.
[2] DEQ does not maintain air discharge permit information for Lane County.

More Information on this location

Oregon DEQ Neighborhood Info (by region/county)
See wells in the same Township Range Section from the Oregon Water Resources Department Well logs Application
See county's scanned assessor maps through ORMAP

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Block 4632

Oregon DEQ Facility Profiler 2.0

[Help] [Close Window]

Facility Summary Report

Return to Site Listing Print Report

Maps

Facility / Site Information for Location 96806

Facility/Site Name:	TAYLOR ELECTRIC WAREHOUSE	**Latitude:**	45° 30' 37.8"
Address:	1709 SE 3RD ST.	**Longitude:**	-122° 39' 47.9"
City State Zip:	PORTLAND OR 97214	**Location Accuracy:**	HIGH
		Last Updated:	5/23/2006 4:01:00 PM

Aliases

Rexel/Taylor Electrical Supply ECSI

Geographic Features

Township:	T1S-R1E-S2	**Congress Dist:**	3	**Forest Type:**	N/A
County:	MULTNOMAH	**OR Senate Dist:**	21	**Vegetation:**	Urban and industrial
Watershed:	LOWER WILLAMETTE	**OR House Dist:**	42	**Agricultural Land:**	PREDOM IRR
Drinking Water Source:		N/A			

Oregon DEQ Program Information

Environmental Cleanup (ECSI)

Operation ID	Start Date	NFA Date	Permit Type	Permit SubType	Status	Detail Information[1]	EPA Number
4632	05/22/2006		Contaminated Site		Suspect site requiring further investigation	ECSI Site Report	

[1] Linked reports may be unavailable from 9:00pm to 7:00am PST due to system maintenance.
[2] DEQ does not maintain air discharge permit information for Lane County.

More Information on this location

Oregon DEQ Neighborhood Info (by region/county)
See wells in the same Township Range Section from the Oregon Water Resources Department Well logs Application
See county's scanned assessor maps through ORMAP

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Portland General Electric Company
121 SW Salmon Street • Portland, Oregon 97204

June 8, 2006
ES-148-2006
ENV 10

Mr. Mark Pugh
Department of Environmental Quality
Northwest Region
Suite 400
2020 SW 4th Avenue
Portland, Oregon 972O1

Subject: Transformer Oil Release Report, OERS No. 06-1238

Dear Mr. Pugh:

The following information regarding the transformer oil release at the May 18th, 2006 Taylor Electric Fire is being provided by Portland General Electric Company (PGE) as requested in your letter dated May 23, 2006. Given the extent of the fire damage at the transformers, we estimate the maximum volume of oil released to the environment was approximately 10 gallons. Most of the oil from the transformers was burned up during the fire. The following information is included in the attached appendixes:

A. DEQ Spill Release Report.

B. MSDS for Transformer Oil.

C. Area Map.

D. Analytical Results.

E. Pictures of the burned transformers.

If you have any questions or need additional information, please contact me at 503-464-8528 (tom.stodd@pgn.com).

Sincerely,

Tom Stodd
Environmental Specialist
PGE Environmental Services

Attachments

c: Tom Van Hoon, PGE
John McGregor, City of Portland
Dennis Norton, PGE (W/O attachments)

APPENDIX A

SPILL/RELEASE REPORT

DEQ
State of Oregon Department of Environmental Quality

1 - GENERAL INFORMATION

OERS No. *06-1238*

a. Company/Individual Name: *Portland General Electric*

b. Address: *121 SW Salmon Street, Mail Station 3WTCBR05*
Portland, Oregon 97204

c. Company Contact Person: *Tom Stodd*

d. Phone Number(s): *(503) 464-8528*

e. Specific on-site location of the release (and address if different from above):
Taylor Electric Warehouse Fire: 240 SE Clay Street
Portland, OR 97204
[The nearest intersection to the transformers was Market St. & 2nd Avenue.]

Please provide a map of the site showing area(s) where the release occurred, any sample collection locations, location of roads/ditches/surface water bodies, etc.

2 - RELEASE INFORMATION

a. Date/Time Release started: *05/18/06 @ 12:00 AM* Date/Time Stopped: *05/18/06 @ 8:30 AM*

b. Release was reported to (specify Date/Time/Name of Person contacted where applicable):

ODEQ *Kimberly Van Patten on 05/18/06 @ 8:32 AM*

OERS *Jennifer on 05/18/06 @ 8:09 AM*

NRC *Kevin Williams on 5/18/06 @ 8:12 AM*

Others(describe): *Petty Officer Lowell of Coast Guard on 05/18/06 @ 11:39 AM and Ali Dirks of City of Portland on 05/18/06 @ 7:45 AM*

c. Person(s) reporting release: *Terry Worrell*

d. Name, quantity and physical state (gas, liquid, solid or semi-solid) of material(s) released:
Less than 10 gallons of transformer oil were released (the damage suggests that nearly all of the 120 total gallons of oil in the transformers was burned up before it spilled to the street).

Please attach copies of material safety data sheets (MSDS) for released material(s).

e. The release affected: ____Air ____Groundwater __√__Surface Water ____Soil ____Sediment

f. Name and distance to nearest surface water body(s), even if unaffected (include locations of creeks, streams, rivers and ditches that discharge to surface water on maps):
The Willamette River is approximately 1000 feet west of the warehouse fire location.

Has the release reached the surface water identified above?: __√__Yes ____No

Could the release potentially reach the surface water identified above? __√__Yes ____No

Explain: *While most of the oil was burned, some oil did reach the ground. It was washed to a nearby storm drain by water from a broken water line and by water used to fight the fire.*

g. Depth to nearest aquifer/groundwater: *not applicable*

Is nearest aquifer/groundwater potable (drinkable)? ____Yes __√__No

Has the release reached the nearest aquifer/groundwater? ____Yes __√__No

Explain: *The oil and water traveled on asphalt until it reached a storm drain, where it was carried to the Willamette river.*

h. Release or potential release to the air occurred? __√__Yes ____No
Explain: *Most of the transformer oil was volatilized during the fire.*

i. Was there a threat to public safety? __√__Yes ____No

j. Is there potential for future releases? ____Yes __√__No
Explain: *The warehouse fire caused the release. That's not anticipated to happen again any time soon. The public safety issue was due to the fire itself, rather than the oil release.*

k. Describe other effects/impacts from release (emergency evacuation, fish kills, etc.):
The power to the area was interrupted while the fire department responded to the 4-Alarm fire.

l. Describe how the release occurred. Include details such as the release source, cause, contributing weather factors, activities occurring prior to or during the release, dates and times of various activities, first responders involved in containment activities, etc.:
The Taylor Electric Warehouse caught fire around 10:30 PM on May 17th. The three transformers on one pole caught fire some time between 11:00 PM and 4:00 AM. There was approximately 120 gallons of oil originally in the transformers. The transformers fell to the street during the fire. Residual oil from the transformers mixed with water from a nearby burst water line and water being sprayed by the eight to twelve fire department crews fighting the fire. Oil was also observed coming from the warehouse (as observed by firefighters and a PGE representative). The water flowed into one of the two down-slope storm drains, which carried the water to the Willamette River. Water was approximately two feet high at the storm drain when PGE spill cleanup arrived, so attempts to contain the spill with booms and pads were not possible. An oil sheen was observed in the river, but the Coast Guard determined the amount of oil was insufficient to warrant any recovery efforts on the river. As soon as the Fire Department allowed access to the transformers, PGE line crews cut away the connecting wiring. PGE spill cleanup staff sampled the transformers to determine the PCB content of the oil. A swab sample was collected from the empty transformer. The PCB concentrations were 44 and 32 ppm and 19 mg/100 cm^2.

3 - SITE INFORMATION

a. Adjacent land uses include (check all that apply and depict on site maps):
____Residential __√__Commercial __√__Light Industrial ____Heavy Industrial
____Agricultural ____Other (describe):

b. What is the population density surrounding the site: *low residential*

c. Is the site and/or release area secured by fencing or other means? ____Yes __√__No

d. Soil types (check all that apply): ____alluvial ____ bedrock ____ clay ____sandy
____silt ____ silty loam __√__artificial surface (cement/asphalt/etc.)

e. Describe site topography: *Mostly flat, with a slight slope to the river.*

4 - CLEANUP INFORMATION

a. Was site cleanup performed? __√__ Yes ____ No

If No, explain: _____

b. Who performed the site cleanup?

Company Name: __*Portland General Electric*__

Address: __*(see above)*__

Cleanup Supervisor: __*Tom Van Hoon*__

Phone Number(s): __*(503) 963-6884*__

c. Has all contamination been removed from the site? __√__ Yes ____ No

If No, explain: _____

d. Estimated volume of contaminated soil removed: ____*None*____

e. Estimated volume of contaminated soil left in place: ____*None*____

f. Was a hazardous waste determination made for cleanup materials? ____ Yes __√__ No

g. Based on the determination, are the cleanup materials hazardous wastes?

____ Yes __√__ No If Yes, list all waste codes: _____

h. Was contaminated soil or water disposed of at an off-site location? ____ Yes __√__ No

If yes, attach copies of receipts/manifests/etc., and provide the following information:

Facility Name: _____

Address: _____

Facility Contact: _____

Phone Number(s): _____

i. Is contaminated soil or water being stored and/or treated on-site? ____ Yes __√__ No

If yes, please describe the material(s), storage and/or treatment area, and methods utilized (attach additional sheets if necessary):

_____

j. Describe cleanup activities including what actions were taken, dates and times actions were initiated and completed, volumes of contaminated materials that were removed, etc. (attach additional sheets or contractor reports if necessary or more convenient):

PGE's spill cleanup supervisor arrived at the fire at approximately 4:30 AM on the 18th, providing information and logistical support to PGE staff, the Fire Department and various regulatory agencies. Cleanup began at approximately 8:00 AM after the transformers were cut loose by the line crews (after they were granted access by the Fire Department). The Transformers were bagged, tagged and transported to a temporary storage area awaiting disposal. Absorbent W was spread out to absorb the residual oil and then recovered for disposal (approximately two drums of cleaning materials). Cleanup was completed by 1:00 PM on the 18th.

5 - SAMPLING INFORMATION

Attach copies of all sample data and indicate locations of sample collection on maps.

a. Were samples of contaminated soil collected? ____Yes ____No __√_N/A
b. Were samples of contaminated water collected? ____Yes _√__No ____N/A
c. Were samples collected to show that all contamination had been removed?
____Yes __√_No ____N/A
d. Describe sampling activities, results and discuss rationale for sampling methods:
PCB oil sampling and swab sampling was performed at the transformers. Analytical results are attached.

6 - ADDITIONAL INFORMATION

a. Provide a description or plan outlining the list of actions to be taken to prevent future releases from occurring.
New poles and lines were installed across the street to avoid shut downs during demolition or reconstruction activities at the warehouse. There is no expectation that a fire at that location will happen again.

7 - SPILL REPORT CHECKLIST

To ensure that you have gathered all the information requested by the Department in this Spill/Release Report, please complete the following checklist:

__√_ Map(s) of the site showing buildings, roads, surface water bodies, ditches, waterways, point of the release, extent of contamination, areas of excavation and sample collection locations attached.

__√_ Material Safety Data Sheet (MSDS) for released material(s) attached. **Note: an MSDS is not required for motor fuels.**

__√__ Sampling data/analytical results attached.

____ Receipts/manifests (if any) for disposal of cleanup materials attached.

____ Contractor reports (if any) attached.

If you would like to submit your report by e-mail it can be submitted electronically to: DOSPILLS@deq.state.or.us

APPENDIX B

CALTRAN 60-30

CALUMET LUBRICANTS

Revised: 7/23/2003

Primary CAS: 128-39-2

Filename: 008325

Hazard Ratings

NFPA	Health - 0	Flammability - 1	Reactivity - 0	Other -
HMIS	Health -	Flammability -	Reactivity -	PPE -

This product is also known as
TRANSFORMER OIL

Other Information
None

Ingredients

HINDERED PHENOL TYPE INHIBITOR	128-39-2	0.3%

Locations
Transformer Shop / EM&C / Distribution

MSDS DOCUMENT

PRODUCT: CALTRAN 60-30

PRINT REV. DATE: 07/23/2003

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME OF THIS PRODUCT: CALTRAN 60-30

MSDS ID: 3020-00

MANUFACTURER:
CALUMET LUBRICANTS COMPANY
2780 WATERFRONT PKWY E.
SUITE 200
INDIANAPOLIS, IN 46214

CONTACT NAME: ANNE GOLDSMITH

PHONE NUMBER: (317) 328-5860

EMERGENCY PHONE:
CHEMTREC: (800) 424-9300

UNUSED: 6/30/95

NFPA:
HEALTH 0
FIRE 1
REACTIVITY 0
SPECIFIC

2. COMPOSITION AND INFORMATION ON INGREDIENTS

INGREDIENT	CAS NUMBER	WEIGHT %	ACGIH TLV	PEL	STE
HINDERED PHENOL TYPE INHIBITOR	128-39-2	0.3%	0		

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: NOT EXPECTED TO CAUSE A SEVERE EMERGENCY HAZARD.

POTENTIAL HEALTH EFFECTS:

PRIMARY ROUTE(S) OF ENTRY: SKIN

EYES: TESTS ON SIMILAR MATERIALS SUGGEST THAT NO EYE EFFECT BE EXPECTED

SKIN:
TESTS ON SIMILAR MATERIALS INDICATE THAT NO SIGNIFICANT ADVERSE HEALTH EFFECTS ARE EXPECTED TO OCCUR UPON SHORT-TERM EXPOSURE.

INGESTION:
TESTS ON SIMILAR MATERIALS INDICATE NO SIGNIFICANT ADVERSE EFFECTS EXPE

PRACTICALLY NON-TOXIC.

INHALATION: TESTS ON SIMILAR MATERIAL INDICATE NO ACUTE EFFECTS ARE EXP

CHRONIC (CANCER INFORMATION):
PROLONGED AND/OR REPEATED CONTACT WITH THIS MATERIAL MAY PRODUCE SKIN IRRITATION AND INFLAMMATION.

CARCINOGEN LISTED BY:
NATIONAL TOXICOLOGY PROGRAM: (NO)
I.A.R.C: (NO)
OSHA: (NO)
ACGIH: (NO)

THIS PRODUCT DOES NOT REQUIRE A CANCER HAZARD WARNING IN ACCORDANCE WIT OSHA HAZARD COMMUNICATION STANDARD.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
PERSONNEL WITH PRE-
EXISTING SKIN DISORDERS SHOULD AVOID CONTACT WITH THIS
PRODUCT.

4. FIRST AID INFORMATION

EYES:
FLUSH EYES IMMEDIATELY WITH WATER FOR AT LEAST 15 MINUTES OR UNTIL IRRITATION SUBSIDES. IF IRRITATION PERSISTS, CONSULT A PHYSICIAN.

SKIN:
WASH THOROUGHLY WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND W BEFORE REUSE. IF IRRITATION OR RASH DEVELOPS, OBTAIN MEDICAL ASSISTANCE IMMEDIATELY REMOVE SOAKED CLOTHING.

INGESTION:
PRODUCT IS PRACTICALLY NON-
TOXIC. DO NOT INDUCE VOMITING. OBTAIN EMERGENCY
MEDICAL ATTENTION.

INHALATION:
NOT LIKELY TO OCCUR EXCEPT A MIST. REMOVE PATIENT TO FRESH AIR AND CONS A PHYSICIAN. IF BREATHING IS DIFFICULT, GIVE OXYGEN. IF NOT BREATHING G ARTIFICIAL RESPIRATION.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT:
>293 DEG. F

>145 DEG. C
COC ASTM D92

AUTOIGNITION:
>650 DEG. F
>343 DEG. C

FLAMMABILITY CLASS: IIIB

LOWER EXPLOSIVE LIMIT (%): NOT DETERMINED
UPPER EXPLOSIVE LIMIT (%): NOT DETERMINED

FIRE AND EXPLOSION HAZARDS:
SLIGHTLY COMBUSTIBLE. OSHA/NFPA CLASS IIIB COMBUSTIBLE LIQUID. IF HEATE ABOVE ITS FLASH POINT WILL RELEASE FLAMMABLE VAPORS WHICH CAN BURN IN T OPEN OR BE EXPLOSIVE IN CONFINED SPACES IF EXPOSED TO IGNITION SOURCE. OR SPRAYS MAY BE FLAMMABLE BELOW OIL'S NORMAL FLASH POINT. KEEP AWAY FR EXTREME HEAT OR OPEN FLAME.

EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, WATER FOG AND FOAM.

NOTE: WATER, FOG AND FOAM MAY CAUSE FROTHING AND SPATTERING.

FIRE FIGHTING INSTRUCTIONS:
USE WATER TO COOL CONTAINERS EXPOSED TO FLAMES. DO NOT ENTER ENCLOSED O CONFINED WORK SPACE WITHOUT PROPER PROTECTIVE EQUIPMENT. FIRE FIGHTING PERSONNEL SHOULD WEAR RESPIRATORY PROTECTION (POSITIVE PRESSURE IF AVAI

PRODUCTS OF COMBUSTION INCLUDE FUMES, SMOKE AND CARBON MONOXIDE.

6. ACCIDENTAL RELEASE MEASURES

SHUT OFF IGNITION SOURCE. CONTAIN SPILL AND KEEP FROM ENTERING WATERWAY SEWERS. USE PERSONAL PROTECTIVE EQUIPMENT. ADVISE EPA; STATE AGENCY IF REQUIRED. ABSORB ON INERT MATERIAL. SHOVEL, SWEEP OR VACUUM SPILL.

7. HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS:
KEEP AWAY FROM FLAMES, SPARKS OR HOT SURFACES. NEVER USE A TORCH TO CUT WELD ON OR NEAR CONTAINER. EMPTY OIL CONTAINERS CAN CONTAIN EXPLOSIVE V NFPA CLASS IIIB STORAGE. WASH THOROUGHLY AFTER HANDLING.

WORK/HYGIENIC PRACTICES:
WASH HANDS WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USE TOILET FACILITIES. DO NOT USE GASOLINE, SOLVENTS, KEROSENE, OR HARSH AB SKIN CLEANERS FOR WASHING EXPOSED SKIN AREAS. TAKE A SHOWER AFTER WORK GENERAL CONTACT OCCURS. REMOVE OIL-
SOAKED CLOTHING AND LAUNDER BEFORE REUSE.

LAUNDER OR DISCARD CONTAMINATED SHOES AND LEATHER GLOVES.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROLS:
USE ADEQUATE VENTILATION TO KEEP OIL MISTS OF THIS MATERIAL BELOW APPLI STANDARD(S). SEE SECTION ON OCCUPATIONAL EXPOSURE LIMITS.

EYE/FACE PROTECTION:
SAFETY GLASSES OR SPLASH GOGGLES. HAVE SUITABLE EYE WASH WATER AVAILABL

SKIN PROTECTION:
AVOID PROLONGED AND/OR REPEATED SKIN CONTACT. IF PROLONGED CONTACT CANN AVOIDED, WEAR PROTECTIVE IMPERVIOUS GLOVES AND CLOTHING. ACCEPTABLE MAT FOR GLOVES ARE POLYVINYL CHLORIDE; NEOPRENE; NITRILE; POLYVINYL ALCOHOL VITON.

RESPIRATORY PROTECTION:
NORMALLY NOT REQUIRED IF ADEQUATE VENTILATION. IF OCCUPATIONAL EXPOSURE LIMITS ARE EXCEEDED WEAR NIOSH/MSHA APPROVED APPARATUS.

OTHER/GENERAL PROTECTION:
IF THERE IS A LIKELIHOOD OF SPLASHING, AN OIL RESISTANT CLOTHING SHOULD WORN. NEVER WEAR OIL SOAKED CLOTHING. LAUNDER OR DRY CLEAN BEFORE WEARI DISCARD OIL SOAKED SHOES. AFFIX WARNING LABELS ON CONTAINERS IN ACCORDA WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD)

CONCENTRATION

INGREDIENT NAME	EXPOSURE LIMITS	PERCENT BY V
SEVERELY HYDROTREATED LIGHT NAPHTHENIC PETROLEUM OIL CAS NUMBER: 64742-53-6	EXPOSURE LIMITS: OIL MIST: OSHA PEL MIST: 5 MG/M3 8 HRS ACGIH TLV MIST: 5 MG/M3 8 HRS	99.7
HINDERED PHENOL TYPE INHIBITOR CAS NUMBER: 428-39-2		0.3

9. PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT CAS NUMBER: 64742-53-6

APPEARANCE: CLEAR, PALE STRAW TO WATER WHITE, COLORED, VISCOUS LIQUID.

ODOR: LIGHT BLAND PETROLEUM.

ODOR THRESHOLD: N.D.

BASIC PHYSICAL PROPERTIES:

PHYSICAL STATE: LIQUID

BOILING POINT:
IBP: >350 DEG. F
IBP: >176 DEG. C

MELTING POINT:
N/A DEG. F
N/A DEG. C

VAPOR PRESSURE: <0.04 MMHg @ 20 DEG. C

VAPOR DENSITY (AIR=1): >5

SPECIFIC GRAVITY: 0.91 WATER = 1

MOLECULAR WEIGHT: 265.00

PACKING DENSITY: N/A

SOLUBILITY (H2O): NEGLIGIBLE IN WATER

PERCENT VOLATILES: NIL

VOLATILE ORGANIC COMPOUNDS (VOC) CONTENT: 35.3%

EVAPORATION RATE: 1000X SLOWER THAN ETHYL ETHER

pH: ESSENTIALLY NEUTRAL

VISCOSITY: 63 SUS AT 100 DEG. F

10. STABILITY AND REACTIVITY

STABILITY: STABLE

CONDITIONS TO AVOID (STABILITY): SOURCES OF IGNITION.

INCOMPATIBLE MATERIALS: STRONG OXIDIZERS.

HAZARDOUS DECOMPOSITION PRODUCTS:
COMBUSTION MAY PRODUCE CARBON MONOXIDE AND OTHER ASPHYXIANTS.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

11. TOXICOLOGICAL INFORMATION

ACUTE STUDIES:
TESTS ON SIMILAR MATERIALS SHOW A LOW ORDER OF ACUTE ORAL AND DERMAL TO

EYE EFFECTS: MINIMAL IRRITATION ON CONTACT.

SKIN EFFECTS:
PRACTICALLY NON-
TOXIC IF ABSORBED. MAY CAUSE MILD IRRITATION WITH PROLONGED
AND REPEATED CONTACT.

ACUTE ORAL EFFECTS:
TESTS ON SIMILAR MATERIALS INDICATE LOW ORDER OF ACUTE ORAL TOXICITY.

ACUTE INHALATION EFFECTS: LOW ACUTE TOXICITY EXPECTED ON INHALATION.

THIS PRODUCT IS SEVERELY HYDROTREATED. SEVERELY HYDROTREATED NAPHTHENIC PETROLEUM OIL HAS NOT BEEN FOUND TO BE CARCINOGENIC OR A POTENTIAL CARC THIS PRODUCT IS NOT LISTED AS CARCINOGENIC OR A POTENTIAL CARCINOGEN BY NATIONAL TOXICOLOGY PROGRAM, BY THE I.A.R.C. MONOGRAPHS OR BY OSHA.

12. ECOLOGICAL INFORMATION

NO DATA GIVEN

13. DISPOSAL CONSIDERATIONS

FOLLOW FEDERAL, STATE AND LOCAL REGULATIONS. NOT A RCRA HAZARDOUS WASTE UNCONTAMINATED, IF "USED", RCRA CRITERIA MUST BE DETERMINED. DO NOT FLU DRAIN/STORM SEWER. CONTRACT TO AUTHORIZED DISPOSAL SERVICE. IF PERMITTE INCINERATION MAY BE PRACTICAL. RECOMMEND RECYCLING.

RCRA INFORMATION: NOT A RCRA HAZARDOUS WASTE IF UNCONTAMINATED.

14. TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: NOT REGULATED BY DOT

HAZARD CLASS: NOT APPLICABLE

DOT IDENTIFICATION NUMBER: N/A

DOT SHIPPING LABEL: NOT REGULATED BY DOT

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATORY INFORMATION:

SARA 302 THRESHOLD PLANNING QUANTITY: NOT APPLICABLE

SARA 304 REPORTABLE QUANTITY: NOT APPLICABLE

SARA 311 CATEGORIES:

IMMEDIATE (ACUTE) HEALTH EFFECTS	N
DELAYED (CHRONIC) HEALTH EFFECTS	N
FIRE HAZARD	N
SUDDEN RELEASE OF PRESSURE HAZARD	N
REACTIVITY HAZARD	N

EPA/TSCA INVENTORY:
THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICALS.

EPA HAZARD CLASSIFICATION CODE: NOT APPLICABLE

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (C
NO CHEMICALS IN THIS PRODUCT ARE SUBJECT TO THE REPORTING REQUIREMENTS
CERCLA

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:
NO CHEMICALS IN THIS PRODUCT EXCEED THE DE MINIMUS REPORTING LEVEL ESTA
BY SARA TITTLE III, SECTION 313 AND 40 CFR 372

WHMIS CLASSIFICATION: NOT CONTROLLED

16. OTHER INFORMATION

NFPA HAZARD RATING:

HEALTH	0 NEGLIGIBLE
FIRE	1 SLIGHT
REACTIVITY	0 NEGLIGIBLE

SUPERCEDES MSDS DATED: 05/27/94

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:
THE INFORMATION CONTAINED HEREIN IS BASED UPON DATA BELIEVED TO BE RELI
AND REFLECTS OUR BEST PROFESSIONAL JUDGMENT. ALTHOUGH REASONABLE CARE H
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MAKE NO REPRESENTATIONS AS TO THE ACCURACY OR COMPLETENESS OF THE INFOR
CONTAINED THEREIN AND ASSUME NO RESPONSIBILITY REGARDING THE SUITABILIT
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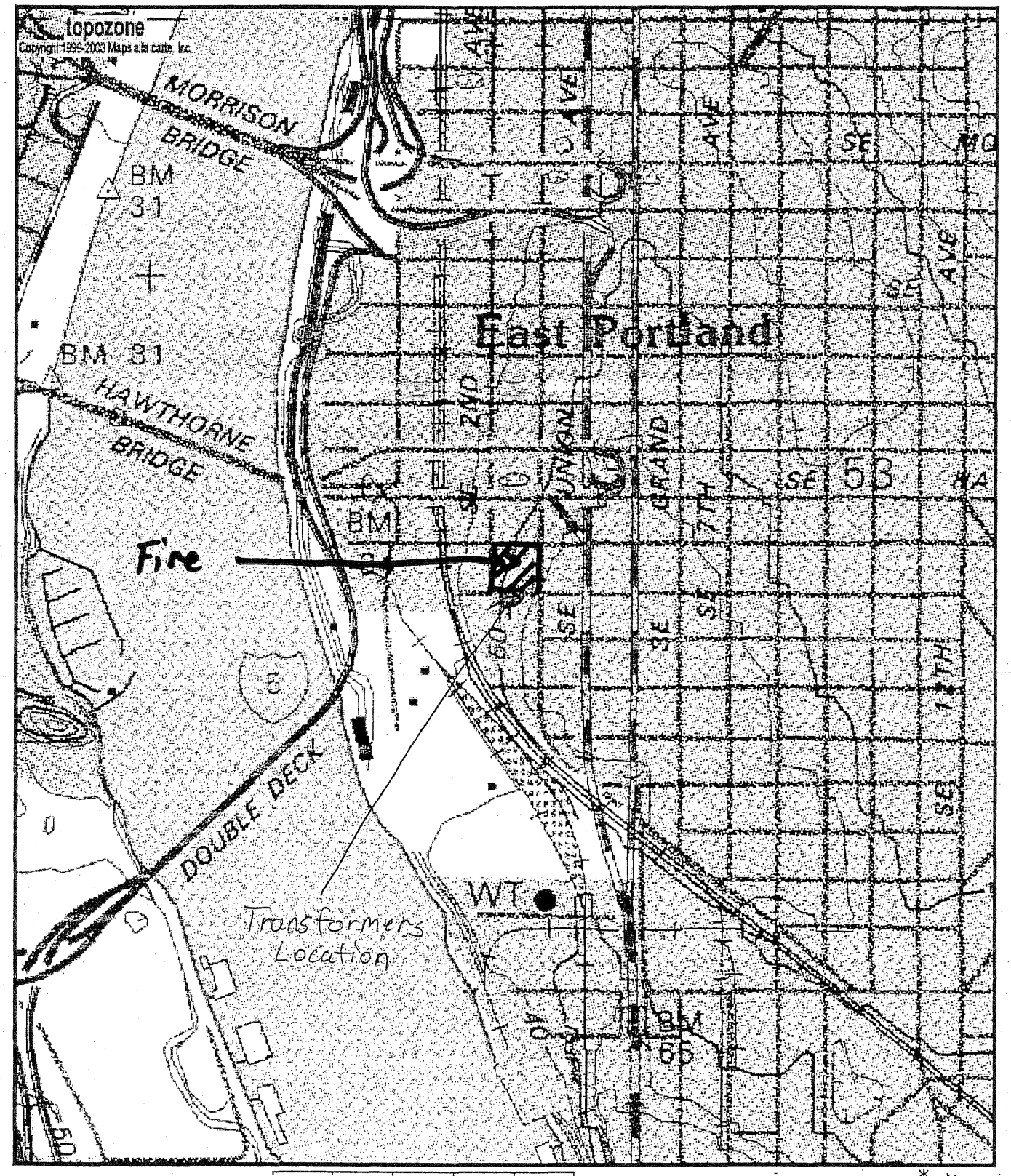
ITS USE. EACH INDIVIDUAL SHOULD MAKE A DETERMINATION AS TO THE SUITABIL
OF THE INFORMATION FOR HIS/HER PARTICULAR PURPOSE(S).

APPENDIX C



0 0.1 0.2 0.3 0.4 0.5 km

0 0.09 0.18 0.27 0.36 0.45 mi

Map center is UTM 10 526291E 5039751N (WGS84/NAD83)

Portland quadrangle

Projection is UTM Zone 10 NAD83 Datum

M=17.513

G=0.24

APPENDIX D

TestAmerica
ANALYTICAL TESTING CORPORATION

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

May 19, 2006

Jerry Thomas
PGE-EM&C Substation Test/Maint Engrng (RC216)
3700 SE 17th Avenue
Portland, OR 97202

RE: RUSH PCB SPILL

Enclosed are the results of analyses for samples received by the laboratory on 05/18/06 09:35. The following list is a summary of the Work Orders contained in this report, generated on 05/19/06 16:33.

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

Work Order	Project	ProjectNumber
PPE0798	RUSH PCB SPILL	RC-328/PO#6645/1709 SE

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

Brian L Cone

Brian Cone, Industrial Services Manager

TestAmerica
ANALYTICAL TESTING CORPORATION

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

PGE-EM&C Substation Test/Maint Engrng (RC216)	Project Name:	RUSH PCB SPILL	
3700 SE 17th Avenue	Project Number:	RC-328/PO#6645/1709 SE 3rd-Portland	Report Created:
Portland, OR 97202	Project Manager:	Jerry Thomas	05/19/06 16:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
514/100KVA	PPE0798-01	Oil	05/18/06 08:00	05/18/06 09:35
513/100KVA	PPE0798-02	Oil	05/18/06 08:00	05/18/06 09:35
601/100KVA	PPE0798-03	Wipe	05/18/06 08:00	05/18/06 09:35

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PGE-EM&C Substation Test/Maint Engrng (RC216)	Project Name: RUSH PCB SPILL	
3700 SE 17th Avenue	Project Number: RC-328/PO#6645/1709 SE 3rd-Portland	Report Created:
Portland, OR 97202	Project Manager: Jerry Thomas	05/19/06 16:33

Polychlorinated Biphenyls per EPA Method 8082

TestAmerica - Portland, OR

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PPE0798-01	**(514/100KVA)**		**Oil**			**Sampled: 05/18/06 08:00**					
Total PCBs		EPA 8082	**32.9**	-----	1.01	mg/kg	1x	6050873	05/18/06 09:45	05/18/06 10:25	
Surrogate(s):	*Decachlorobiphenyl*			*116%*		*75 - 135 %*	"			"	
PPE0798-02	**(513/100KVA)**		**Oil**			**Sampled: 05/18/06 08:00**					
Total PCBs		EPA 8082	**44.1**	-----	1.01	mg/kg	1x	6050873	05/18/06 09:45	05/18/06 10:45	
Surrogate(s):	*Decachlorobiphenyl*			*117%*		*75 - 135 %*	"			"	
PPE0798-03	**(601/100KVA)**		**Wipe**			**Sampled: 05/18/06 08:00**					
Aroclor 1016		EPA 8082	ND	-----	2.00	ug/Sample	1x	6050865	05/18/06 10:40	05/18/06 12:10	
Aroclor 1221		"	ND	-----	4.00	"	"	"	"	"	
Aroclor 1232		"	ND	-----	2.00	"	"	"	"	"	
Aroclor 1242		"	**6.66**	-----	2.00	"	"	"	"	"	
Aroclor 1248		"	ND	-----	2.00	"	"	"	"	"	
Aroclor 1254		"	ND	-----	2.00	"	"	"	"	"	
Aroclor 1260		"	**12.6**	-----	2.00	"	"	"	"	"	
Surrogate(s):	*Decachlorobiphenyl*			*76.5%*		*48 - 150 %*	"			"	

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PGE-EM&C Substation Test/Maint Engrng (RC216)	Project Name:	RUSH PCB SPILL	
3700 SE 17th Avenue	Project Number:	RC-328/PO#6645/1709 SE 3rd-Portland	Report Created:
Portland, OR 97202	Project Manager:	Jerry Thomas	05/19/06 16:33

Polychlorinated Biphenyls per EPA Method 8082 - Laboratory Quality Control Results

TestAmerica - Portland, OR

QC Batch: 6050865 Wipe Preparation Method: EPA 3550

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (6050865-BLK1)								Extracted: 05/18/06 10:40						
Aroclor 1016	EPA 8082	ND	---	2.00	ug/Sample	1x	--	--	--	--	--	--	05/18/06 13:09	
Aroclor 1221	"	ND	---	4.00	"	"	--	--	--	--	--	--	"	
Aroclor 1232	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
Aroclor 1242	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
Aroclor 1248	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
Aroclor 1254	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
Aroclor 1260	"	ND	---	2.00	"	"	--	--	--	--	--	--	"	
Surrogate(s): Decachlorobiphenyl		*Recovery:*	*112%*		*Limits:*	*48-150%*	"						*05/18/06 13:09*	
LCS (6050865-BS1)								Extracted: 05/18/06 10:40						
Aroclor 1016	EPA 8082	10.6	---	2.00	ug/Sample	1x	--	10.0	106%	(70-146)	--	--	05/18/06 12:49	
Aroclor 1260	"	11.0	---	2.00	"	"	--	"	110%	(63-155)	--	--	"	
Surrogate(s): Decachlorobiphenyl		*Recovery:*	*113%*		*Limits:*	*48-150%*	"						*05/18/06 12:49*	
LCS Dup (6050865-BSD1)								Extracted: 05/18/06 10:40						
Aroclor 1016	EPA 8082	10.7	---	2.00	ug/Sample	1x	--	10.0	107%	(70-146)	0.939%	(27)	05/18/06 12:30	
Aroclor 1260	"	10.9	---	2.00	"	"	--	"	109%	(63-155)	0.913%	(33)	"	
Surrogate(s): Decachlorobiphenyl		*Recovery:*	*114%*		*Limits:*	*48-150%*	"						*05/18/06 12:30*	

QC Batch: 6050873 Oil Preparation Method: Oil Qual. Extraction

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (6050873-BLK1)								Extracted: 05/18/06 09:45						
Total PCBs	EPA 8082	ND	---	0.996	mg/kg	1x	--	--	--	--	--	--	05/18/06 11:05	
Surrogate(s): Decachlorobiphenyl		*Recovery:*	*117%*		*Limits:*	*75-135%*	"						*05/18/06 11:05*	
LCS (6050873-BS1)								Extracted: 05/18/06 09:45						
Total PCBs	EPA 8082	11.8	---	0.998	mg/kg	1x	--	11.2	105%	(70-136)	--	--	05/18/06 11:24	
Surrogate(s): Decachlorobiphenyl		*Recovery:*	*118%*		*Limits:*	*75-135%*	"						*05/18/06 11:24*	
Duplicate (6050873-DUP1)					QC Source: PPE0798-01			Extracted: 05/18/06 09:45						
Total PCBs	EPA 8082	32.8	---	1.01	mg/kg	1x	32.9	--	--	--	0.304%	(10)	05/18/06 11:44	
Surrogate(s): Decachlorobiphenyl		*Recovery:*	*117%*		*Limits:*	*75-135%*	"						*05/18/06 11:44*	

TestAmerica - Portland, OR

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Brian L Cone

Brian Cone, Industrial Services Manager

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ANALYTICAL TESTING CORPORATION

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

PGE-EM&C Substation Test/Maint Engrng (RC216) 3700 SE 17th Avenue Portland, OR 97202	Project Name: RUSH PCB SPILL Project Number: RC-328/PO#6645/1709 SE 3rd-Portland Project Manager: Jerry Thomas	Report Created: 05/19/06 16:33

Polychlorinated Biphenyls per EPA Method 8082 - Laboratory Quality Control Results

TestAmerica - Portland, OR

QC Batch: 6050873 Oil Preparation Method: Oil Qual. Extraction

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike (6050873-MS1)				QC Source: PPE0798-01				Extracted: 05/18/06 09:45						
Total PCBs	EPA 8082	44.8	---	1.01	mg/kg	1x	32.9	11.4	104%	(60-150)	--	--	05/18/06 12:04	
Surrogate(s): Decachlorobiphenyl		*Recovery:*	*116%*		*Limits:*	*75-135%*	"						*05/18/06 12:04*	

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PGE-EM&C Substation Test/Maint Engrng (RC216)	Project Name:	RUSH PCB SPILL	
3700 SE 17th Avenue	Project Number:	RC-328/PO#6645/1709 SE 3rd-Portland	Report Created:
Portland, OR 97202	Project Manager:	Jerry Thomas	05/19/06 16:33

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 Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*. 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.

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

Brian L Cone

Brian Cone, Industrial Services Manager

PPE0798 Left on Scholsferry exit
Rt on Nimbus

PCB EMERGENCY RUSH SAMPLE CHAIN OF CUSTODY FOR ELECTRICAL EQUIPMENT ONLY

~~Northwest~~ Test America on The left

NCA WO#_____

SPILL LOCATION 1709 SE 3RD (PORTLAND)		
COMPANY NO. 514, 513, 601	KVA (3) 100	SERIAL NO.
RC NO. 328	DATE SAMPLED 5/18/06	SAMPLE TAKEN BY J THOMAS
TELEPHONE RESULTS TO		
SITE RESPONDER		
SPILL COORDINATOR (EM&C Response/Foreman) J THOMAS	PHONE 849-2659	PAGER
EM&C RESPONSE	PHONE	PAGER
SAMPLE DELIVERED TO LAB BY [illegible]	TIME 9:35 am	DATE 5/18/06
SAMPLE RECEIVED BY Erica Tot	TIME 935	DATE 5/18/06
SAMPLE RECEIVED IN APPROPRIATE CONTAINER? ☐ Yes ☐ No		

HAND THIS CHAIN OF CUSTODY ALONG WITH SAMPLE OVER TO LAB PERSONNEL ONLY. THIS CHAIN OF CUSTODY MUST BE WITH THE SAMPLE WHEN DELIVERED TO THE LAB.

24.2°C
CC+Tot

Note: Lab to Contact Environmental Services With Test Results.

Verbal Results Given To:	By NCA Staff:	Results Given:
Date:	Time:	

TAT: _____

Non-Conformances?
Circle Y or N
(If Y, see other side)

TEST AMERICA SAMPLE RECEIPT CHECKLIST

Received By: (applies to temp at receipt)
Date: 5/18/06
Time: 9:35
Initials: EF

Logged-in By:
Date: 5/18/06
Initials: EF

Unpacked/Labeled By:
Date: 5/18/06
Initials: EF

Cooler ID: ____ (____ of ____)

Work Order No PPE0798
Client: PG&E
Project: RUSH PCB

Container Type:
____ Cooler
____ Box
X None/Other _____

COC Seals
____ Ship Container
____ On Bottles
X None
_____ Sign By
_____ Date

Packing Material
____ Bubble Bags
____ Styrofoam
____ Foam Packs
X None/Other Other _____

Refrigerant
____ Gel Ice Pack _____
____ Loose Ice
X None/Other _____
____ None

Received Via: Bill# _____
____ Fed Ex
X Client
____ UPS
____ NCA Courier
____ DHL
____ Mid Valley
____ Senvoy
____ TDP
____ GS
____ Other _____

Cooler Temperature (IR) 24.2 °C Plastic (Glass) (circle one) (Frozen filters, Tedlars and aqueous Metals exempt)

Temperature Blank? _____ °C or (NA)

Trip Blank? Y or N or (NA)

Sample Containers:		ID			ID
Intact?	(Y) or N	_____	Metals Preserved?	Y or N or (NA)	_____
Provided by NCA?	(Y) or N	_____	Client QAPP Preserved?	Y or N or (NA)	_____
Correct Type?	(Y) or N	_____	Adequate Volume? (for tests requested)	(Y) or N	_____
#Containers match COC?	(Y) or N	_____	Water VOAs: Headspace?	Y or N or (NA)	_____
IDs/time/date match COC?	(Y) or N	_____	Comments:		
Hold Times in hold?	(Y) or N	_____			

PROJECT MANAGEMENT

Is the Chain of Custody complete? Y or N If N, circle the items that were incomplete

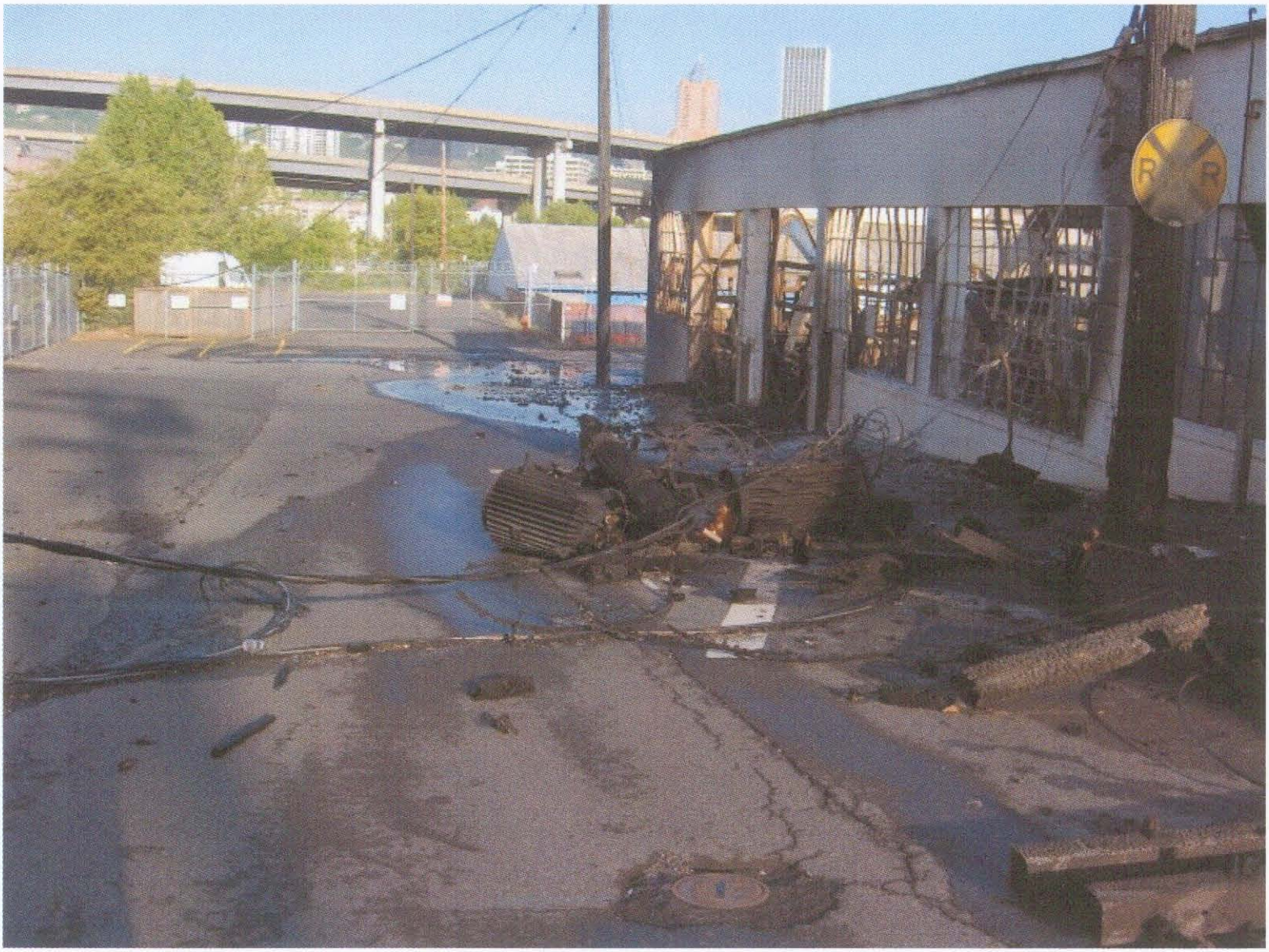
Comments, Problems _____

Total access set up? Y or N
Has client been contacted regarding non-conformances? Y or N If Y ____/____ (Date Time)

PM Initials: _____ Date: _____ Time: _____

(rev 3, 09/12/05)

APPENDIX E



PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.
1

Direction Photo Taken:

Southeast

Description:

View of the south wall in the north room from SE Second Avenue. Note burned beams and staining on walls as well as charred debris on the concrete slab.

Photo No.
2

Direction Photo Taken:

East

Description:

View of eastern wall in the north room from SE Second Avenue. Note staining on walls as well as charred debris on floor.

PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.
3

Direction Photo Taken:

Northeast

Description:

View of the inside northern wall in the north room from SE Second Avenue. Note staining on walls as well as burned beams and charred debris on floor.

Photo No.
4

Direction Photo Taken:

Northeast

Description:

View of the inside northern wall in the north room from SE Second Avenue. Note staining on walls as well as burned beams, charred debris, and staining on floor.

PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.
5

Direction Photo Taken:

East

Description:

View of docking bay from SE Second Avenue. Low point where sediment and debris have accumulated. Note staining on floor and far wall.

Photo No.
6

Direction Photo Taken:

Southeast

Description:

View of docking bay from SE Second Avenue looking back to the boiler room. Sediment and debris have accumulated in the docking bay. Note soil pile on the right and debris pile on the far wall.

PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.
7
Direction Photo Taken:

Northeast

Description:

View at the docking bay from SE Second Avenue looking northeast to the northern wall in southwest room. Note charred debris and staining on walls.

Photo No.
8
Direction Photo Taken:

East

Description:

View of the intersection of SE Second Avenue and SE Market Street, looking at the southwest corner of the building. Note the burned telephone poles adjacent to the building and storm drain in the foreground. Pole adjacent to the "X" in the street is the former location of the PGE transformers. Surface drainage is to the west.

PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.

9

Direction Photo Taken:

North-northeast

Description:

View of the southwestern room from SE Market Street. Looking north at soil stockpile, staining on walls, and charred debris.

Photo No.

10

Direction Photo Taken:

Northwest

Description:

View of the southwestern room from SE Market Street. Looking northwest at soil stockpile, staining on walls, and charred debris. Also note the gap in the concrete floor (with exposed soil) in the southwest inside corner of the building.

PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.
11

Direction Photo Taken:

Northeast

Description:

View from SE Market Street of burned pole which was the former locations of three PGE transformers prior to the fire.

PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.
12
Direction Photo Taken:

Northeast

Description:

View of the southwestern room from SE Market Street. Looking northeast at the center wall dividing the two southern rooms. Note staining on walls, concrete debris pile, and charred debris.

Photo No.
13
Direction Photo Taken:

Northeast

Description:

View from SE Market Street of burned pole which was the former location of three PGE transformers prior to the fire.

PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.
14
Direction Photo Taken:

Northwest

Description:

View from SE Market Street looking into the southeastern room. Note the oil staining on the floor and charred staining on the walls.

Photo No.
15
Direction Photo Taken:

West-northwest

Description:

View from SE Market Street looking into the southeastern room. Note the oil staining on the floor and charred staining on the walls.

PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.
16
Direction Photo Taken:

West

Description:

View from SE Third Avenue looking into the southeastern room. Note the oil staining on the floor and charred staining on the walls. Ramp along the far wall provides access downward from street level.

Photo No.
17
Direction Photo Taken:

West

Description:

View from SE Third Avenue looking into the southeastern room. Note the charred staining on the walls and window frames.

PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.
18
Direction Photo Taken:

West

Description:

View into the northern room on the east edge from SE Third Avenue. The picture shows the exposed soil area where boring SB9 was drilled during the Phase II Investigation. Note slight oil staining on the concrete slab.

Photo No.
19
Direction Photo Taken:

Northwest

Description:

View into the northern room on the east edge from SE Third Avenue. The picture shows the exposed soil area where borings SB7 and SB8 were drilled during the Phase II Investigation. Note slight oil staining on the concrete slab and charred staining on the walls.

PHOTOGRAPHIC LOG

Rexel-Taylor Site Visit
240 SE Clay Street
Portland, Oregon

URS Project No. 25696745

Date: May 26, 2009

Photo No.
20
Direction Photo Taken:

Southwest

Description:
View into the northern room on the east edge from SE Third Avenue. The picture shows an interior building south of where SB8 was drilled during the Phase II Investigation. Note the charred debris on the roof of the small interior building.

Photo No.
21
Direction Photo Taken:

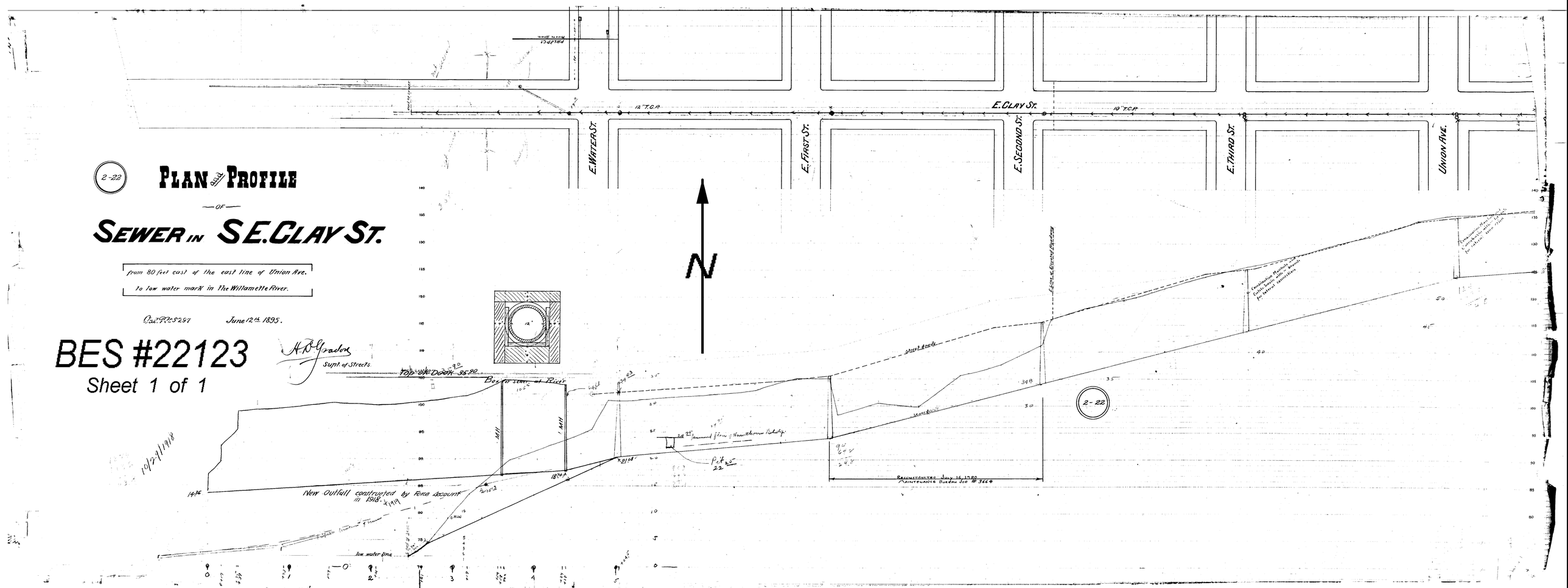
West

Description:

View into the northern room at the northern wall taken from SE Third Avenue. Note slight oil staining on the concrete slab and charred staining on the walls and window.

Photographs of City Outfall 33

Historical Records Regarding the Construction and Maintenance of City Outfall 33



2-22
PLAN and PROFILE
OF
SEWER IN S.E. CLAY ST.
from 80 feet east of the east line of Union Ave.
to low water mark in the Willamette River.
Ord. No. 5297
June 12th 1895.
BES #22123
Sheet 1 of 1
H. D. Gradon
Supt. of Streets.
10/29/1918
E. CLAY ST.
E. WATER ST.
E. FIRST ST.
E. SECOND ST.
E. THIRD ST.
UNION AVE.
12" T.C.P.
10" T.C.P.
N
Top of Dock 35.90
Box of Sewer at River
MH
MH
New Outfall constructed by Force Account in 1918.
low water line
Street grade
Sewer Grade
Pit 22
Reconstructed July 16, 1980
Maintenance Bureau Job # 3664
2-22

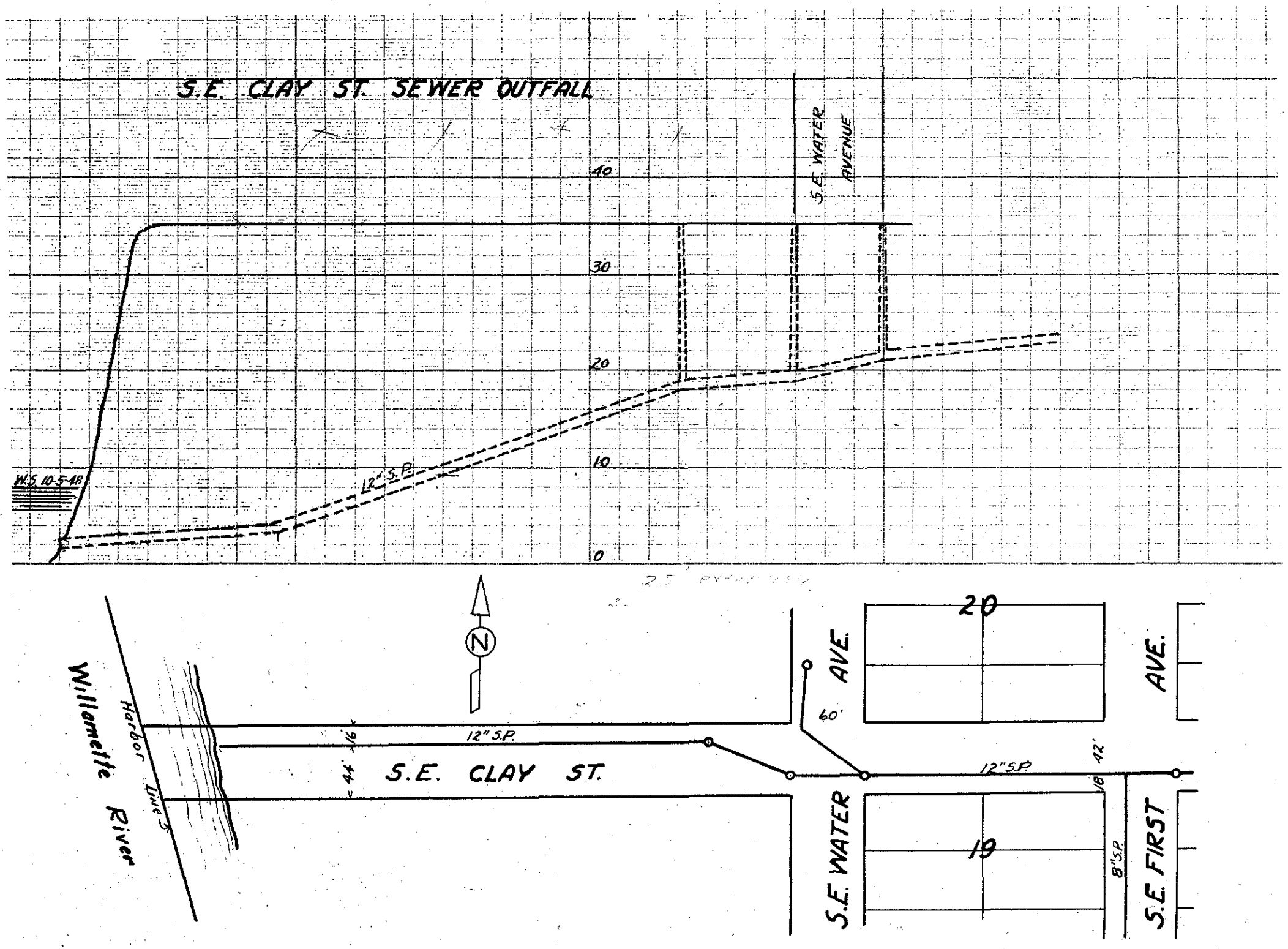
OUTFALL AT THE FOOT OF S.E. CLAY STREET

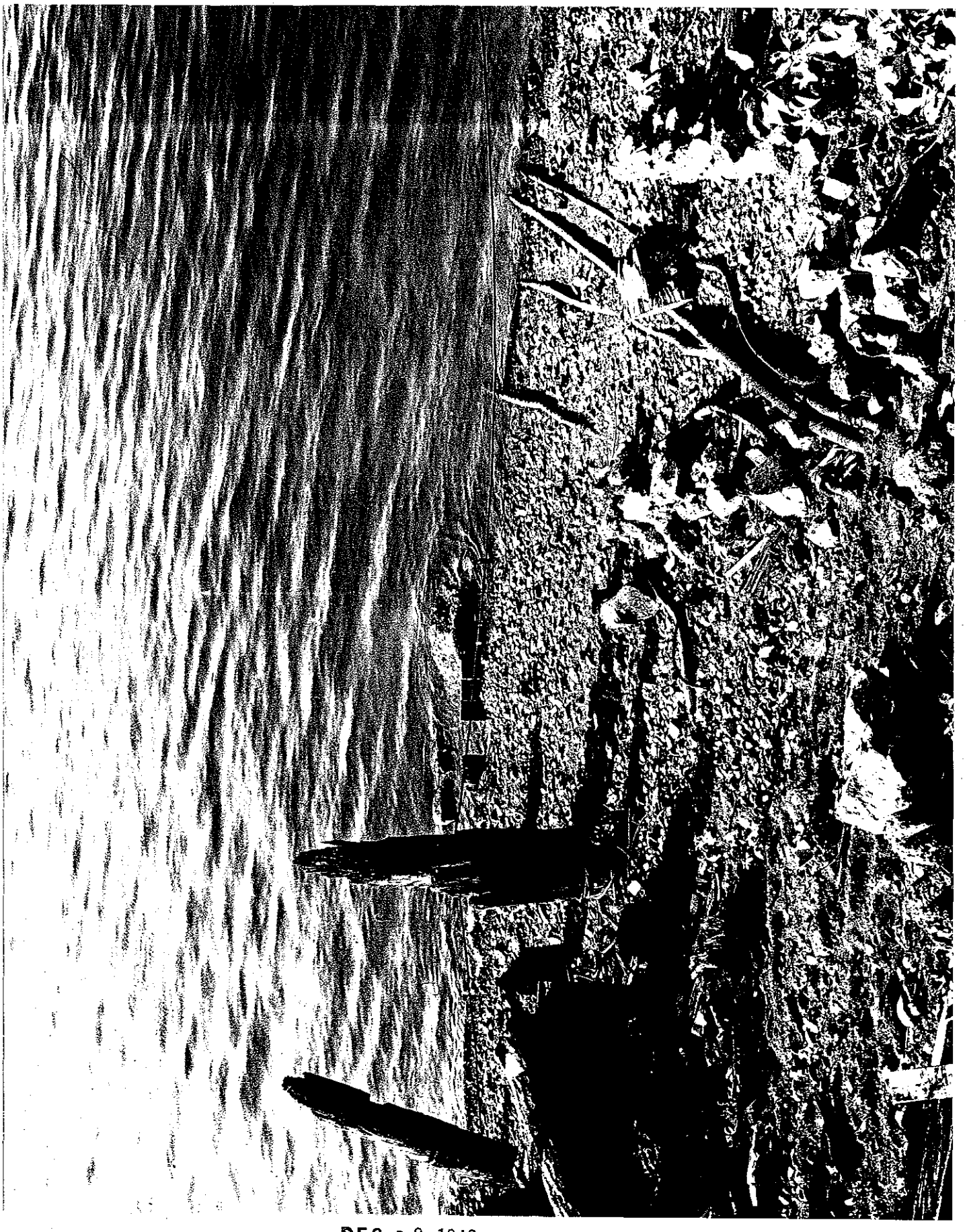
October 5, 1948

Outfall is in very good condition. Interior of pipe is clean and free flowing. Flow line is about 1.5 feet under water at this stage of the river. River elevation 6.0 feet City of Portland datum. The end of the pipe projects out 10 feet into the river.

January 16th, 1950

This outfall is still in excellent condition.


S.E. CLAY ST. SEWER OUTFALL
S.E. WATER AVENUE
40
30
20
10
0
W.S. 10-5-48
12" S.P.
N
Willamette River
Harbor Line
44'
16'
12" S.P.
S.E. CLAY ST.
60'
AVE.
20
19
S.E. WATER
12" S.P.
42'
18
8" S.P.
S.E. FIRST
AVE.



DEC 28 1948

OUTFALL AT THE FOOT OF S.E. CLAY STREET

RIVER ELEV. 6.0 FEET

OUTFALL INSPECTION

S.E. SECTION

October 1955

Sewer No.	Location	Remarks Condition	Sanitary Flow
26	S.E. Marion St.	Good	None
27	S.E. Umatilla St.	Good	None
28	S.E. Insley St.	Good	None
29	S.E. Woodward St.	End of sewer is covered should be extended.	
30	S.E. Taggart St.	Good	Yes
31	S.E. Division Pl.	Good	None
32	S.E. Harrison St.		
33	S.E. Clay St.	End of sewer covered by fill dumped at foot of street.	
34	S.E. Hawthorne Blvd.	Good	None
35	S.E. Yamhill St.	Good	None
36	S.E. Alder St.	Good	Yes
37	S.E. Stark St.	Good	Yes
38	S.E. Oak St.	Good	Yes
39	S.E. Ash St.	Good, except end section is broken off.	None

SEWER NO. 33

OUTFALL AT THE FOOT OF S.E. CLAY STREET

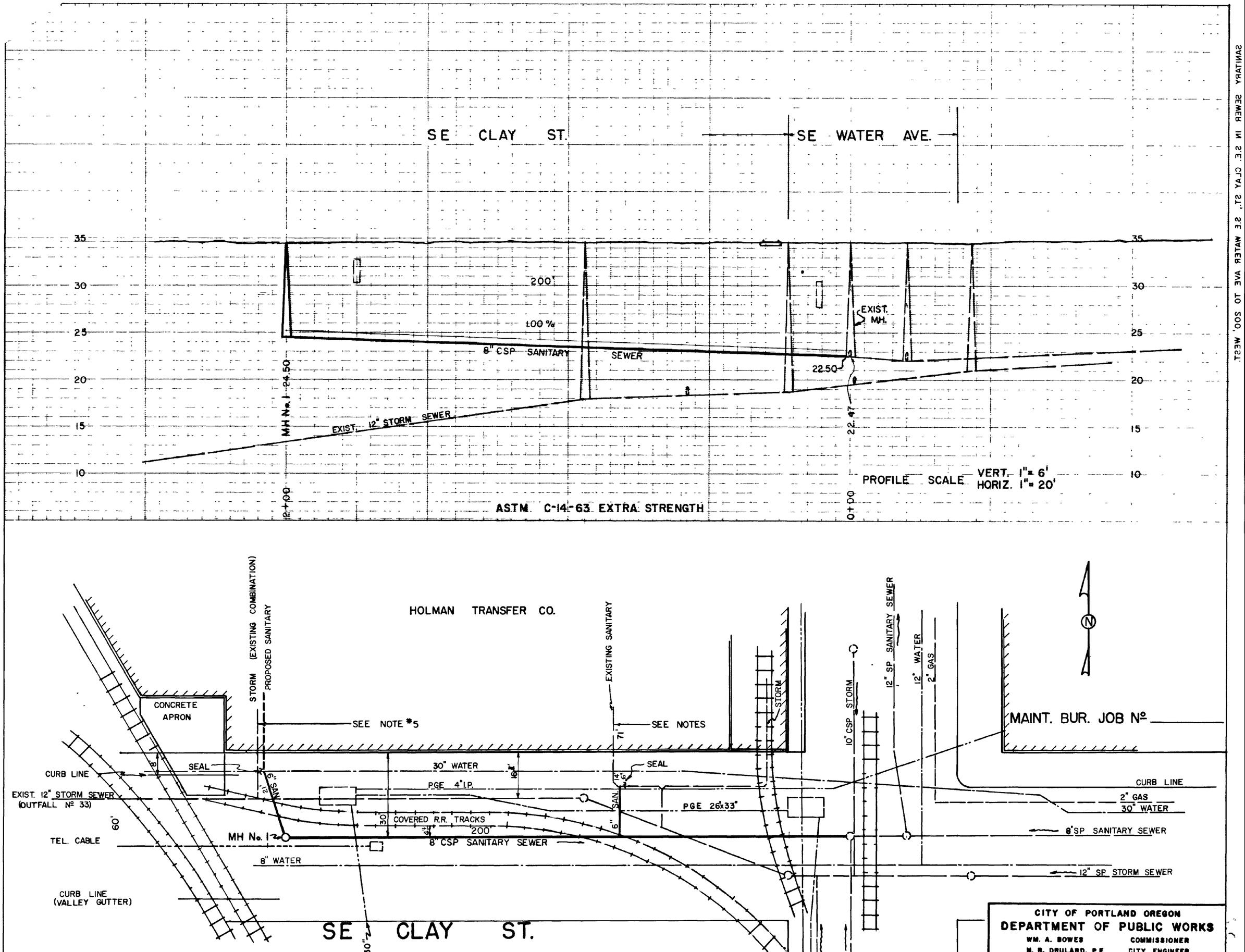
REPAIRS NEEDED

October 5, 1948

No repairs needed at this time.

January 16, 1950

No repairs needed at this time.



THE ABOVE DRAWING AND THE FOLLOWING NOTES APPLY IF THE PROPOSED SANITARY HOUSE BRANCHES HAVE BEEN CONSTRUCTED AND TEMPORARILY CONNECTED TO THE STORM SEWER.

NOTES:

1. CONTACT JOHANSEN'S PLUMBING 282-2221 FOR LOCATION & DEPTH OF SANITARY BRANCH AT CURB LINE.
2. RECONNECT SANITARY BRANCHES TO SANITARY SEWER.
3. SEAL EXIST. SAN. CONNECTIONS TO STORM SEWER.
4. CONTACT PORT. TRACTION CO. FOR WORK RELATIVE TO RAILROAD TRACKS. (Mr. F.V. Schlaf, Supt. 233-5481)
5. STORM BRANCHES TO REMAIN CONNECTED TO 12" STORM SEWER.

REGISTERED PROFESSIONAL ENGINEER 4628 OREGON JULY 8, 1960 LLOYD D. BROWNSON

CITY OF PORTLAND OREGON
DEPARTMENT OF PUBLIC WORKS
WM. A. BOWES COMMISSIONER
N. R. DRULARD, P.E. CITY ENGINEER

RIVER POLLUTION CONTROL PROJECT

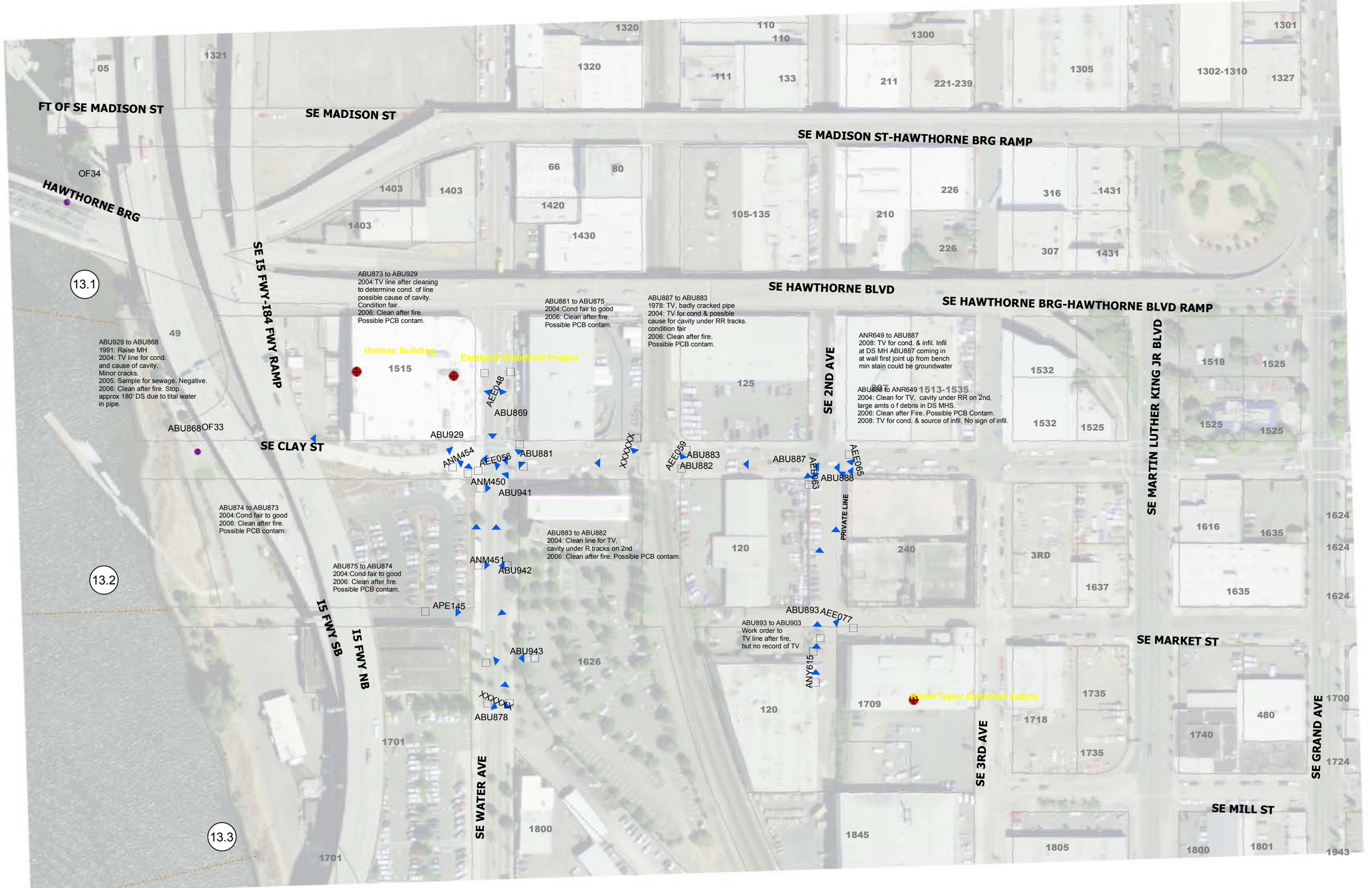
SANITARY SEWER IN S.E. CLAY ST.
S.E. WATER AVE. TO 200' WEST

APPROVED: Ray N. Cruden, CHIEF BUREAU OF DESIGN, REG. PROF. ENGR. NO. 2016	DATE 9-16-69
APPROVED: William T. Monahan, ASS'T. CITY ENGINEER, REG. PROF. ENGR. NO. 3787	1/4 SECTION 3230-NE
APPROVED: [signature], CITY ENGINEER, REG. PROF. ENGR. NO. 5666	JOB NO. 2-1[illegible]
DESIGNED BY HGE / DRAWN BY RLH / PETITION NO.	FILE NO. Q-19
	SHEET NO.

SANITARY SEWER IN S.E. CLAY ST., S.E. WATER AVE. TO 200' WEST

FILE NO. Q-19

Recent City Maintenance Records of Outfall 33 System



FT OF SE MADISON ST
SE MADISON ST
SE MADISON ST-HAWTHORNE BRG RAMP
HAWTHORNE BRG
OF34
SE I5 FWY-I84 FWY RAMP
13.1
13.2
13.3
SE HAWTHORNE BLVD
SE HAWTHORNE BRG-HAWTHORNE BLVD RAMP
SE 2ND AVE
SE MARTIN LUTHER KING JR BLVD
SE CLAY ST
I5 FWY SB
I5 FWY NB
SE WATER AVE
SE 3RD AVE
SE MARKET ST
SE MILL ST
SE GRAND AVE
PRIVATE LINE
Holman Building
Eastbank Riverfront Project
Rexel/Taylor Electrical Supply
ABU873 to ABU929
2004:TV line after cleaning
to determine cond. of line
possible cause of cavity.
Condition fair.
2006: Clean after fire.
Possible PCB contam.
ABU881 to ABU875
2004:Cond fair to good
2006: Clean after fire.
Possible PCB contam.
ABU887 to ABU883
1978: TV, badly cracked pipe
2004: TV for cond & possible
cause for cavity under RR tracks.
condition fair
2006: Clean after fire.
Possible PCB contam.
ANR649 to ABU887
2008: TV for cond. & infil. Infil
at DS MH ABU887 coming in
at wall first joint up from bench
min stain could be groundwater
ABU888 to ANR649
2004: Clean for TV, cavity under RR on 2nd,
large amts o f debris in DS MHS.
2006: Clean after Fire. Possible PCB Contam.
2008: TV for cond. & source of infil. No sign of infil.
ABU929 to ABU868
1991: Raise MH
2004: TV line for cond.
and cause of cavity.
Minor cracks.
2005: Sample for sewage. Negative.
2006: Clean after fire. Stop
approx 180' DS due to tital water
in pipe.
ABU874 to ABU873
2004:Cond fair to good
2006: Clean after fire.
Possible PCB contam.
ABU883 to ABU882
2004: Clean line for TV,
cavity under R tracks on 2nd
2006: Clean after fire. Possible PCB contam.
ABU875 to ABU874
2004:Cond fair to good
2006: Clean after fire.
Possible PCB contam.
ABU893 to ABU903
Work order to
TV line after fire,
but no record of TV
ABU868
OF33
ABU869
ABU929
ANM454
AEE056
ABU881
ANM450
ABU941
XXXXXX
AEE059
ABU883
ABU882
ABU887
AEE063
ABU888
AEE065
ANM451
ABU942
APE145
ABU943
XXXXXX
ABU878
ABU893
AEE077
ANY615
1513-1535
1320
1321
05
110
110
1300
1301
111
133
211
221-239
1305
1302-1310
1327
66
80
1403
1403
1420
1403
1430
105-135
210
226
226
316
1431
307
1431
49
1515
125
1532
1518
1525
1532
1525
1525
1525
120
240
3RD
1616
1635
1624
1624
1637
1635
1624
1626
120
1709
1735
1718
1735
480
1740
1700
1724
1701
1701
1800
1845
1805
1800
1801
1943

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
Portland, OR 97204-1912
(503)823-4000

Storm Main Work Order

Report Date	02/25/2009 11:18 AM	**Submitted By**	Corey Treacy	Page 1

Work Order #	185613	**Activity**	SPSWTV 15967315 SPECIAL SEWER TV

Main ID	STMH ABU893	**To**	STMH ABU903	#
Address	1700 SE 2ND AVE PORTLAND OR			

Qualifier	*				
Area	ALDER	ALDER	**District**	SOUT	SOUTH - SE PORTLAND
Sub-area	3230		**Location**	LTR	STREET ROW, LIGHT TRAFFIC
Map #	3230-028D/038D				

Main Line Type	STML	STORM GRAVITY MAIN	**Diameter**	12.00	**Design Flow**	0.00
Pipe Type	UNSPEC	UNSPECIFIED - UPDATE AT INSPEC	**Height**	0.00	**Friction Factor**	0.000
Pipe Shape	CIRC	CIRCULAR (PIPE)	**Length**	210.00	**Slope**	0.00000
Dir From Ups			**Ups Depth**	0.00	**Ups Invert Elev**	0.00
Dir From Dwn			**Dwn Depth**	0.00	**Dwn Invert Elev**	0.00
Joint Type			**Joint Length**	0.00		
Service Status	IN	ASSET IS IN SERVICE				
X Coord						
Y Coord			**As Built**		**Parcel**	
Z Coord			**Date Installed**		**Grnd Water Lev**	0.00
Manufacturer					**Incoming Mains**	0
Critical Rating			**Surface Cover**			
			Ownership			
Budget #						

Initiated By	MBWJC	JACOB	WILLIAMS	**Initiated Date**	05/19/2006	**Scheduled**
Assigned To				**Service #**		**Due**

Authorization	MBBWP	WILLIAM BEAN		
Budget #				
Crew				
Maint Type	UM	UNSCHEDULED MAINTENANCE		
Priority	B	URGENT MAINT - CRITICAL		
Problem	DEBRI	DEBRIS		
Project			**Out of Service**	☐
Source	BES	OTHER BES SECTION	**Potential Service Request**	☐
Last Activity			**Last Activity Completed**	

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
Portland, OR 97204-1912
(503)823-4000

Storm Main Work Order

Report Date	02/25/2009 11:19 AM	**Submitted By**	Corey Treacy	Page 1

Work Order #	238534	**Activity**	SPCLN 15967115 SPECIAL SEWER CLEAN

Main ID	STMH	ABU887	**To** STMH	ABU883	#
Address	200 SE CLAY ST PORTLAND OR				

Qualifier	*				
Area	ALDER	ALDER	**District**	SOUT	SOUTH - SE PORTLAND
Sub-area	3230		**Location**	LTR	STREET ROW, LIGHT TRAFFIC
Map #	3230-022D/018D				

Main Line Type	STML	STORM GRAVITY MAIN	**Diameter**	18.00	**Design Flow**	0.00
Pipe Type	CSP	CONCRETE - UNKNOWN REINFORCING	**Height**	0.00	**Friction Factor**	0.000
Pipe Shape	CIRC	CIRCULAR (PIPE)	**Length**	185.00	**Slope**	0.02968
Dir From Ups			**Ups Depth**	11.00	**Ups Invert Elev**	30.00
Dir From Dwn			**Dwn Depth**	11.60	**Dwn Invert Elev**	24.51
Joint Type			**Joint Length**	0.00		
Service Status	IN	ASSET IS IN SERVICE				
X Coord						
Y Coord			**As Built**	MB03664	**Parcel**	
Z Coord			**Date Installed**	01/01/1980	**Grnd Water Lev**	0.00
Manufacturer					**Incoming Mains**	0
Critical Rating			**Surface Cover**			
			Ownership			
Budget #						

Initiated By	ESHSJ	STEPHEN	HAWKINS	**Initiated Date**	05/18/2006	**Scheduled**	05/19/2006 14:21
Assigned To	MRP		METRO ROOTER PROF	**Service #**		**Due**	

Authorization	ESHSJ	STEPHEN HAWKINS		
Budget #				
Crew				
Maint Type	SP	SPECIAL PROJECT		
Priority	A	EMERGENCY RESP WITHIN 24 HRS		
Problem	PROJ	SPECIAL PROJECT WORK		
Project			**Out of Service**	☐
Source	ENGR	MAINTENANCE ENGINEERING	**Potential Service Request**	☐
Last Activity	SPSWTV	15967315 SPECIAL SEWER TV	**Last Activity Completed**	06/01/2004

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
Portland, OR 97204-1912
(503)823-4000

Storm Main Work Order

Report Date 02/25/2009 11:19 AM **Submitted By** Corey Treacy

Work Order # 238535 **Activity** SPCLN 15967115 SPECIAL SEWER CLEAN

Main ID STMH ABU883 **To** STMH ABU882 **#**
Address 120 SE CLAY ST
PORTLAND OR

Qualifier	*				
Area	ALDER	ALDER	**District**	SOUT	SOUTH - SE PORTLAND
Sub-area	3230		**Location**	LTR	STREET ROW, LIGHT TRAFFIC
Map #	3230-018D/017D				

Main Line Type	STML	STORM GRAVITY MAIN	**Diameter**	18.00	**Design Flow**	0.00
Pipe Type	CSP	CONCRETE - UNKNOWN REINFORCING	**Height**	0.00	**Friction Factor**	0.000
Pipe Shape	CIRC	CIRCULAR (PIPE)	**Length**	10.00	**Slope**	0.01100
Dir From Ups			**Ups Depth**	11.60	**Ups Invert Elev**	24.51
Dir From Dwn			**Dwn Depth**	11.60	**Dwn Invert Elev**	24.40
Joint Type			**Joint Length**	0.00		
Service Status	IN	ASSET IS IN SERVICE				
X Coord						
Y Coord			**As Built**	MB03664	**Parcel**	
Z Coord			**Date Installed**	01/01/1980	**Grnd Water Lev**	0.00
Manufacturer					**Incoming Mains**	0
Critical Rating			**Surface Cover**			
			Ownership	BES	ENVIRONMENTAL SERVICES	
Budget #						

Initiated By	ESHSJ	STEPHEN	HAWKINS	**Initiated Date**	05/18/2006	**Scheduled**	05/19/2006 14:21
Assigned To	MRP		METRO ROOTER PROF	**Service #**		**Due**	

Authorization	ESHSJ	STEPHEN HAWKINS		
Budget #				
Crew				
Maint Type	SP	SPECIAL PROJECT		
Priority	A	EMERGENCY RESP WITHIN 24 HRS		
Problem	PROJ	SPECIAL PROJECT WORK		
Project			**Out of Service**	☐
Source	ENGR	MAINTENANCE ENGINEERING	**Potential Service Request**	☐
Last Activity	SPSWTV	15967315 SPECIAL SEWER TV	**Last Activity Completed**	06/01/2004

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
Portland, OR 97204-1912
(503)823-4000

Storm Main Work Order

Report Date	02/25/2009 10:38 AM	**Submitted By**	Corey Treacy	Page 1

Work Order #	238536	**Activity**	SPCLN 15967115 SPECIAL SEWER CLEAN

Main ID	STMH	ABU882	**To** STMH	ABU881	#
Address	120 SE CLAY ST PORTLAND OR				

Qualifier	*				
Area	ALDER	ALDER	**District**	SOUT	SOUTH - SE PORTLAND
Sub-area	3230		**Location**	LTR	STREET ROW, LIGHT TRAFFIC
Map #	3230-017D/016D				

Main Line Type	STML	STORM GRAVITY MAIN	**Diameter**	12.00	**Design Flow**	0.00
Pipe Type	UNSPEC	UNSPECIFIED - UPDATE AT INSPEC	**Height**	0.00	**Friction Factor**	0.000
Pipe Shape	CIRC	CIRCULAR (PIPE)	**Length**	250.00	**Slope**	0.01328
Dir From Ups			**Ups Depth**	11.60	**Ups Invert Elev**	24.40
Dir From Dwn			**Dwn Depth**	13.30	**Dwn Invert Elev**	21.08
Joint Type			**Joint Length**	0.00		
Service Status	IN	ASSET IS IN SERVICE				
X Coord						
Y Coord			**As Built**	22123	**Parcel**	
Z Coord			**Date Installed**	06/12/1895	**Grnd Water Lev**	0.00
Manufacturer					**Incoming Mains**	0
Critical Rating			**Surface Cover**			
			Ownership	BES	ENVIRONMENTAL SERVICES	
Budget #						

Initiated By	ESHSJ	STEPHEN	HAWKINS	**Initiated Date**	05/18/2006	**Scheduled**	05/19/2006 14:21
Assigned To	MRP		METRO ROOTER PROF	**Service #**		**Due**	

Authorization	ESHSJ	STEPHEN HAWKINS		
Budget #				
Crew				
Maint Type	SP	SPECIAL PROJECT		
Priority	A	EMERGENCY RESP WITHIN 24 HRS		
Problem	PROJ	SPECIAL PROJECT WORK		
Project			**Out of Service**	☐
Source	ENGR	MAINTENANCE ENGINEERING	**Potential Service Request**	☐
Last Activity	SPSWTV	15967315 SPECIAL SEWER TV	**Last Activity Completed**	05/24/2006

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1120 SW 5th Ave
Portland, OR 97204-1912
(503)823-4000

COMPLETED Storm Main Work Order

Report Date	02/25/2009 10:39 AM	**Submitted By**	Corey Treacy	Page 1

Work Order #	185622	**Activity**	SPSWTV 15967315 SPECIAL SEWER TV

Main ID	STMH	ABU882	**To** STMH	ABU881	#
Address	120 SE CLAY ST PORTLAND OR				

Qualifier	*				
Area	ALDER	ALDER	**District**	SOUT	SOUTH - SE PORTLAND
Sub-area	3230		**Location**	LTR	STREET ROW, LIGHT TRAFFIC
Map #	3230-017D/016D				

Main Line Type	STML	STORM GRAVITY MAIN	**Diameter**	12.00	**Design Flow**	0.00
Pipe Type	UNSPEC	UNSPECIFIED - UPDATE AT INSPEC	**Height**	0.00	**Friction Factor**	0.000
Pipe Shape	CIRC	CIRCULAR (PIPE)	**Length**	250.00	**Slope**	0.01328
Dir From Ups			**Ups Depth**	11.60	**Ups Invert Elev**	24.40
Dir From Dwn			**Dwn Depth**	13.30	**Dwn Invert Elev**	21.08
Joint Type			**Joint Length**	0.00		
Service Status	IN	ASSET IS IN SERVICE				
X Coord						
Y Coord			**As Built**	22123	**Parcel**	
Z Coord			**Date Installed**	06/12/1895	**Grnd Water Lev**	0.00
Manufacturer					**Incoming Mains**	0
Critical Rating			**Surface Cover**			
			Ownership	BES	ENVIRONMENTAL SERVICES	
Budget #						

Initiated By	ESDJ1	JOE	DVORAK	**Initiated Date**	05/22/2006	**Scheduled**
Assigned To				**Service #**		**Due**

Authorization	MBBWP	WILLIAM BEAN		
Budget #				
Crew				
Maint Type	UM	UNSCHEDULED MAINTENANCE		
Priority	B	URGENT MAINT - CRITICAL		
Problem	UNK	UNKNOWN		
Project			**Out of Service**	☐
Source	ENGR	MAINTENANCE ENGINEERING	**Potential Service Request**	☐
Last Activity	SPSWTV	15967315 SPECIAL SEWER TV	**Last Activity Completed**	05/24/2006

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
Portland, OR 97204-1912
(503)823-4000

Storm Main TV Inspection Detail

Report Date 02/25/2009 10:42 AM **Submitted By** Corey Treacy

Inspection # 226048 **Work Order #** **Activity** STMNTV NOT FOR WO'S - STORM MAIN TV
From ID STMH ABU882 **To** STMH ABU881 **#** **Length** 250.00
Address 120 SE CLAY ST PORTLAND OR
Upstream Address 120 SE CLAY ST PORTLAND OR
Downstream Address 100 SE CLAY ST PORTLAND OR

Started 05/24/2006 00:00
Completed 05/24/2006 00:00
Comp By MBBDL
Project
Crew

Crew Leader
Operator MBBDL
Weather R
Flow Depth 3.00
Pipe Det

Reverse Setup ☐ **Prior History** ☐
Sketch ☐

Media
Format VHS **Media #** 1 DJ1
Index 00 **To** 25:11

Condition Ratings
Structural 6 **Root** 0 **I/I** 0 **Overall** 4

Comments
260' END OF LINER
262'STMH AT 100 SE CLAY ST 13.3'CON.ABU881

Readings

Setup	From	To	Index	Clock	Grouted	Defect	Code	Description
U	0.00	0.00	0	N				
STMH AT 120 SE CLAY ST 11.6'CON.ABU882								
U	1.00	22.00	0	N				
LINER								
U	22.00	0.00	0	N				
VSP								
U	23.70	0.00	2	N	L	F		DEAD/UNUSED SERVICE
U	24.00	0.00	11	N	L	A		PROTRUDING LAT - 0 TO 1 INCHES
U	24.00	0.00	11	N	RC	B		<1/2IN WIDE AND 1 TO 2 FT LONG
U	25.00	0.00	0	N				
START LINER								
U	66.00	0.00	0	N	A	A		BEGIN 1/4 PIPE OR LESS
U	84.00	0.00	0	N	A	F		END 1/4 PIPE WATER
U	112.00	0.00	0	N				
END OF LINER								

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
Portland, OR 97204-1912
(503)823-4000

Storm Main TV Inspection Detail

Report Date 02/25/2009 10:42 AM **Submitted By** Corey Treacy

Readings

ABU882

Setup	From	To	Index	Clock	Grouted	Defect	Code	Description
U	123.00	0.00		10	N	L	F	DEAD/UNUSED SERVICE
U	125.00	0.00		2	N	L	F	DEAD/UNUSED SERVICE
U	131.00	0.00		9	N	L	B	PROTRUDING LAT - 1 TO 2 INCHES
U	148.00	0.00		10	N	L	F	DEAD/UNUSED SERVICE
U	150.00	0.00		2	N	L	F	DEAD/UNUSED SERVICE
U	173.00	0.00		10	N	L	H	FACTORY WYE
U	175.00	0.00		2	N	L	F	DEAD/UNUSED SERVICE
U	190.00	0.00		0	N			
VSP TO CSP								
U	193.00	0.00		10	N	L	H	FACTORY WYE
U	200.00	0.00		0	N			
START LINER								
U	220.00	0.00		0	N	A	A	BEGIN 1/4 PIPE OR LESS
U	250.00	0.00		0	N			
NOT TO MH								

End of Readings

ABU881

Custom

Field Measurements

Job #	185622	**Top Distance**	258.00	ft	**Pipe Diameter**	0.00	in
☐	End For End	**Joint Length**	0.00	ft	**Pipe Height**	0.00	in
		Length TV'd	262.00	ft			

Summary:

ESDJ1 FLOW W T.D.258'COND.FAIR. MOST OF PIPE IS LINED OVER VSP.

Recommendations:

End of Report

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
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COMPLETED Storm Main Work Order

Report Date	02/25/2009 10:47 AM	**Submitted By**	Corey Treacy	Page 1

Work Order #	238537	**Activity**	SPCLN 15967115 SPECIAL SEWER CLEAN

Main ID	STMH	ABU881	**To** STMH	ABU875	#
Address	100 SE CLAY ST PORTLAND OR				

Qualifier	*				
Area	ALDER	ALDER	**District**	SOUT	SOUTH - SE PORTLAND
Sub-area	3230		**Location**	LTR	STREET ROW, LIGHT TRAFFIC
Map #	3230-016D/010D				

Main Line Type	STML	STORM GRAVITY MAIN	**Diameter**	12.00	**Design Flow**	0.00
Pipe Type	UNSPEC	UNSPECIFIED - UPDATE AT INSPEC	**Height**	0.00	**Friction Factor**	0.000
Pipe Shape	CIRC	CIRCULAR (PIPE)	**Length**	40.00	**Slope**	0.52650
Dir From Ups			**Ups Depth**	13.30	**Ups Invert Elev**	21.06
Dir From Dwn			**Dwn Depth**	0.00	**Dwn Invert Elev**	0.00
Joint Type			**Joint Length**	0.00		
Service Status	IN	ASSET IS IN SERVICE				
X Coord						
Y Coord			**As Built**	22123	**Parcel**	
Z Coord			**Date Installed**	06/12/1895	**Grnd Water Lev**	0.00
Manufacturer					**Incoming Mains**	0
Critical Rating			**Surface Cover**			
			Ownership	BES	ENVIRONMENTAL SERVICES	
Budget #						

Initiated By	ESHSJ	STEPHEN	HAWKINS	**Initiated Date**	05/18/2006	**Scheduled**	05/19/2006 14:21
Assigned To	MRP		METRO ROOTER PROF	**Service #**		**Due**	

Authorization	ESHSJ	STEPHEN HAWKINS		
Budget #				
Crew				
Maint Type	SP	SPECIAL PROJECT		
Priority	A	EMERGENCY RESP WITHIN 24 HRS		
Problem	PROJ	SPECIAL PROJECT WORK		
Project			**Out of Service**	☐
Source	ENGR	MAINTENANCE ENGINEERING	**Potential Service Request**	☐
Last Activity	SPCLN	15967115 SPECIAL SEWER CLEAN	**Last Activity Completed**	05/25/2006

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
Portland, OR 97204-1912
(503)823-4000

COMPLETED Storm Main Work Order

Report Date	02/25/2009 10:49 AM	**Submitted By**	Corey Treacy	Page 1

Work Order #	238538	**Activity**	SPCLN 15967115 SPECIAL SEWER CLEAN

Main ID	STMH	ABU875	**To** STMH	ABU874	#
Address	50 SE CLAY ST PORTLAND OR				

Qualifier	*				
Area	ALDER	ALDER	**District**	SOUT	SOUTH - SE PORTLAND
Sub-area	3230		**Location**	LTR	STREET ROW, LIGHT TRAFFIC
Map #	3230-010D/009D				

Main Line Type	STML	STORM GRAVITY MAIN	**Diameter**	12.00	**Design Flow**	0.00
Pipe Type	CSP	CONCRETE - UNKNOWN REINFORCING	**Height**	0.00	**Friction Factor**	0.000
Pipe Shape	CIRC	CIRCULAR (PIPE)	**Length**	25.00	**Slope**	0.00000
Dir From Ups			**Ups Depth**	0.00	**Ups Invert Elev**	0.00
Dir From Dwn			**Dwn Depth**	16.80	**Dwn Invert Elev**	0.00
Joint Type			**Joint Length**	0.00		
Service Status	IN	ASSET IS IN SERVICE				
X Coord						
Y Coord			**As Built**	22123	**Parcel**	
Z Coord			**Date Installed**	06/12/1895	**Grnd Water Lev**	0.00
Manufacturer					**Incoming Mains**	0
Critical Rating			**Surface Cover**			
			Ownership	BES	ENVIRONMENTAL SERVICES	
Budget #						

Initiated By	ESHSJ	STEPHEN	HAWKINS	**Initiated Date**	05/18/2006	**Scheduled**	05/19/2006 14:21
Assigned To	MRP		METRO ROOTER PROF	**Service #**		**Due**	

Authorization	ESHSJ	STEPHEN HAWKINS		
Budget #				
Crew				
Maint Type	SP	SPECIAL PROJECT		
Priority	A	EMERGENCY RESP WITHIN 24 HRS		
Problem	PROJ	SPECIAL PROJECT WORK		
Project			**Out of Service**	☐
Source	ENGR	MAINTENANCE ENGINEERING	**Potential Service Request**	☐
Last Activity	SPCLN	15967115 SPECIAL SEWER CLEAN	**Last Activity Completed**	05/25/2006

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
Portland, OR 97204-1912
(503)823-4000

COMPLETED Storm Main Work Order

Report Date	02/25/2009 11:19 AM	**Submitted By**	Corey Treacy	Page 1

Work Order #	238539	**Activity**	SPCLN 15967115 SPECIAL SEWER CLEAN

Main ID	STMH ABU874	**To**	STMH ABU873	#
Address	50 SE CLAY ST PORTLAND OR			

Qualifier	*				
Area	ALDER ALDER	**District**	SOUT	SOUTH - SE PORTLAND	
Sub-area	3230	**Location**	LTR	STREET ROW, LIGHT TRAFFIC	
Map #	3230-009D/008D				

Main Line Type	STML	STORM GRAVITY MAIN	**Diameter**	12.00	**Design Flow**	0.00
Pipe Type	CSP	CONCRETE - UNKNOWN REINFORCING	**Height**	0.00	**Friction Factor**	0.000
Pipe Shape	CIRC	CIRCULAR (PIPE)	**Length**	10.00	**Slope**	0.00000
Dir From Ups			**Ups Depth**	16.80	**Ups Invert Elev**	0.00
Dir From Dwn			**Dwn Depth**	16.00	**Dwn Invert Elev**	0.00
Joint Type			**Joint Length**	0.00		
Service Status	IN	ASSET IS IN SERVICE				
X Coord						
Y Coord			**As Built**	22123	**Parcel**	
Z Coord			**Date Installed**	06/12/1895	**Grnd Water Lev**	0.00
Manufacturer					**Incoming Mains**	0
Critical Rating			**Surface Cover**			
			Ownership	BES	ENVIRONMENTAL SERVICES	
Budget #						

Initiated By	ESHSJ	STEPHEN	HAWKINS	**Initiated Date**	05/18/2006	**Scheduled**	05/19/2006 14:21
Assigned To	MRP		METRO ROOTER PROF	**Service #**		**Due**	

Authorization	ESHSJ	STEPHEN HAWKINS		
Budget #				
Crew				
Maint Type	SP	SPECIAL PROJECT		
Priority	A	EMERGENCY RESP WITHIN 24 HRS		
Problem	PROJ	SPECIAL PROJECT WORK		
Project			**Out of Service**	☐
Source	ENGR	MAINTENANCE ENGINEERING	**Potential Service Request**	☐
Last Activity	SPCLN	15967115 SPECIAL SEWER CLEAN	**Last Activity Completed**	05/25/2006

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
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COMPLETED Storm Main Work Order

Report Date	02/25/2009 10:52 AM	**Submitted By**	Corey Treacy	Page 1

Work Order #	238540	**Activity**	SPCLN 15967115 SPECIAL SEWER CLEAN

Main ID	STMH	ABU873	**To** STMH	ABU929	#
Address	50 SE CLAY ST PORTLAND OR				

Qualifier	*				
Area	ALDER	ALDER	**District**	SOUT	SOUTH - SE PORTLAND
Sub-area	3230		**Location**	LTR	STREET ROW, LIGHT TRAFFIC
Map #	3230-008D/063D				

Main Line Type	STML	STORM GRAVITY MAIN	**Diameter**	12.00	**Design Flow**	0.00
Pipe Type	VSP	VITRIFIED CLAY	**Height**	0.00	**Friction Factor**	0.000
Pipe Shape	CIRC	CIRCULAR (PIPE)	**Length**	70.00	**Slope**	0.01057
Dir From Ups			**Ups Depth**	16.00	**Ups Invert Elev**	18.74
Dir From Dwn			**Dwn Depth**	17.00	**Dwn Invert Elev**	18.00
Joint Type			**Joint Length**	0.00		
Service Status	IN	ASSET IS IN SERVICE				
X Coord						
Y Coord			**As Built**	22123	**Parcel**	
Z Coord			**Date Installed**	06/12/1895	**Grnd Water Lev**	0.00
Manufacturer					**Incoming Mains**	0
Critical Rating			**Surface Cover**			
			Ownership	BES	ENVIRONMENTAL SERVICES	
Budget #						

Initiated By	ESHSJ	STEPHEN	HAWKINS	**Initiated Date**	05/18/2006	**Scheduled**	05/19/2006 14:21
Assigned To	MRP		METRO ROOTER PROF	**Service #**		**Due**	

Authorization	ESHSJ	STEPHEN HAWKINS		
Budget #				
Crew				
Maint Type	SP	SPECIAL PROJECT		
Priority	A	EMERGENCY RESP WITHIN 24 HRS		
Problem	PROJ	SPECIAL PROJECT WORK		
Project			**Out of Service**	☐
Source	ENGR	MAINTENANCE ENGINEERING	**Potential Service Request**	☐
Last Activity	SPCLN	15967115 SPECIAL SEWER CLEAN	**Last Activity Completed**	05/25/2006

CITY OF PORTLAND, OR BES
1120 SW 5th Ave
Portland, OR 97204-1912
(503)823-4000

COMPLETED Storm Main Work Order

Report Date	02/25/2009 10:53 AM	**Submitted By**	Corey Treacy	Page 1

Work Order #	238541	**Activity**	SPCLN 15967115 SPECIAL SEWER CLEAN

Main ID	STMH ABU929	**To**	STMH ABU868	#
Address	50 SE CLAY ST PORTLAND OR			

Qualifier	*80FT W OF WATER AVE				
Area	ALDER	ALDER	**District**	SOUT	SOUTH - SE PORTLAND
Sub-area	3230		**Location**	LTR	STREET ROW, LIGHT TRAFFIC
Map #	3230-063D/003D				

Main Line Type	STML	STORM GRAVITY MAIN	**Diameter**	12.00	**Design Flow**	0.00
Pipe Type	VSP	VITRIFIED CLAY	**Height**	0.00	**Friction Factor**	0.000
Pipe Shape	CIRC	CIRCULAR (PIPE)	**Length**	360.00	**Slope**	0.01028
Dir From Ups			**Ups Depth**	17.00	**Ups Invert Elev**	18.00
Dir From Dwn			**Dwn Depth**	0.00	**Dwn Invert Elev**	14.30
Joint Type			**Joint Length**	0.00		
Service Status	IN	ASSET IS IN SERVICE				
X Coord						
Y Coord			**As Built**	22123	**Parcel**	
Z Coord			**Date Installed**	06/12/1895	**Grnd Water Lev**	0.00
Manufacturer					**Incoming Mains**	0
Critical Rating			**Surface Cover**			
			Ownership	BES	ENVIRONMENTAL SERVICES	
Budget #						

Initiated By	ESHSJ	STEPHEN	HAWKINS	**Initiated Date**	05/18/2006	**Scheduled**	05/19/2006 14:21
Assigned To	MRP		METRO ROOTER PROF	**Service #**		**Due**	

Authorization	ESHSJ	STEPHEN HAWKINS		
Budget #				
Crew				
Maint Type	SP	SPECIAL PROJECT		
Priority	A	EMERGENCY RESP WITHIN 24 HRS		
Problem	PROJ	SPECIAL PROJECT WORK		
Project			**Out of Service**	☐
Source	ENGR	MAINTENANCE ENGINEERING	**Potential Service Request**	☐
Last Activity	SPCLN	15967115 SPECIAL SEWER CLEAN	**Last Activity Completed**	05/25/2006

2006 Cleaning and Sampling Event

From: Struck, Rod
To: Treacy, Corey;
Subject: FW: Rexel\Taylor Electrical Supply (ECSI 4632)
Date: Wednesday, April 07, 2010 9:57:33 AM
Attachments: 5-24-06 Final Report.pdf
taylor_electric_BES_collection.pdf

From: Struck, Rod
Sent: Thursday, March 05, 2009 10:51 AM
To: 'HOY Ray'
Cc: 'TARNOW Karen E'
Subject: Rexel\Taylor Electrical Supply (ECSI 4632)

Ray,

Attached for your records is a copy of the analytical results for testing performed on solids collected from the City's stormwater line following the Rexell\Taylor fire. My understanding is that water and solids were captured during line cleaning activities in a polyethylene tank and tested prior to disposal. The water was discharged to the sanitary sewer system and the solids were disposed of at the Hillsboro landfill. A map of the City conveyances in the area of the site and specifically the portion of the line the City cleaned following the fire (i.e., sample location) is also attached.

Please keep in mind that the attached sample results were collected to ensure appropriate disposal of wastes generated during line cleaning. Using this data for other purposes, may be appropriate, but should only be done after carefully thinking about potential uses and uncertainties in the data. Data considerations include, but are not limited to:

- Detection levels were appropriate for disposal purposes, but may be elevated for low level risk screening.
- The sample result is representative of solids collected during cleaning and for determination the appropriate disposal method. However, the result may not be representative of material (e.g., transformer oil, ash, soot, debris) conveyed through the line during the fire. This sample was collected after the fire and a significant volume of water, used to put out the fire, was discharged though the stormwater conveyance to Outfall 33.
- It is unknown, how much of oil in the burned transformers was recovered and how much was released to the environment. Further, it is unknown

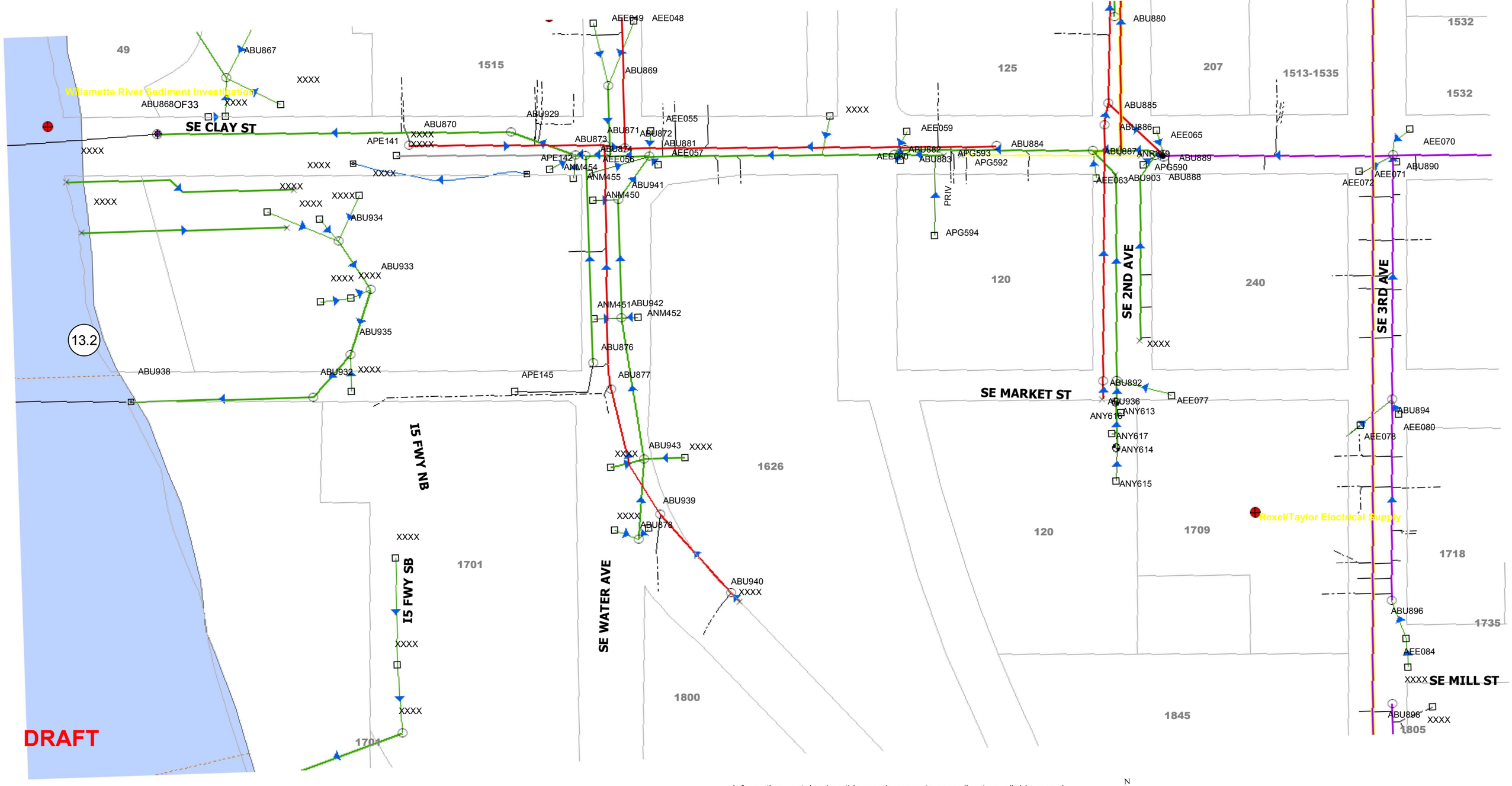
how much oil was transported into the private stormwater line on SE 2nd and subsequently into the City's shared conveyance system or how much of the oil infiltrated into onsite structures or materials (e.g., concrete, asphalt, soils).

- It is unknown whether the PCB results are representative of the source material released from the transformers or of fire degraded source material (PCB and associated carrier oil). PCBs are known to undergo extreme degradation during fires or exposure to high temperatures. PCDDs, PCDFs, and PDBFs are potential degradation products of PCB degradation in fires.
- The composition of the transformer oil (e.g., mineral oil, silicon oil, trichlorobenzene) released is unknown.

Please give me a call if you have any questions. Also, in light of the cooperative work between the City and DEQ on the downtown reach of the Willamette River, the City is interested in assisting DEQ on this project by reviewing site documents or work plans to ensure that sources to City conveyance systems are adequately characterized and controlled using appropriate City and State programs and authorities.

Rod Struck, R.G.
Superfund Program
Bureau of Environmental Services - City of Portland
1120 SW 5th Ave, Room 1000
Portland, OR 97204-1912

Phone: (503) 823-5762



Rexel-Taylor Electrical Supply Conveyance Systems Map

Source: City of Portland

File Name: s:\ctreacy_z\gis\ECSI\Taylor_Electric

Sheet No. 1 OF 1

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
1120 SW Fifth Avenue, Room 1000
Portland Oregon, 97204-1912

Program Manager: Rod Struck
Portland Harbor Superfund

Date Printed: *03/10/2009*

Prepared By: *Corey Treacy*

Information contained on this map is accurate according to available records, however, the City of Portland makes no warranty expressed or implied, as to the completeness or accuracy of the information published.

N

0 65 130 260 Feet

Legend

- Manhole
- Cleanouts
- Flow Control
- No Access
- Storm Gravity Main
- Storm Gravity Main - New
- Sanitary Gravity Main
- Sanitary Gravity Main - New
- Combined Gravity Main
- Abandoned Main
- Connection
- Laterals
- Line Cleaned After Fire
- Private Line (Line Not Cleaned)
- River Miles Tenths
- DEQ Environmental Cleanup Site
- Taxlots
- Outfall

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
(503) 823-5696

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 5-24-06
Page: 1 of 1
Collected By: JO/TM

Project Name: SPCR - INVESTIGATIONS
File Number: 3050.005 Matrix: Sediment

City of Portland Bureau: BES
Contact person: _____ phone _____ Inter-office mail _____
Turn-Around Time: Standard (10 business days) ☐ Rush (5 business days) ☐ Rush (ASAP) ☐

Requested Analyses

WPCL Sample I.D.	Location	Sample Date	Sample Time	Sample Type	Other: PCB's (Low-level -STL)	Other: HCX	Other: Total Metals (Ag, Cd, Cr, Cu, Hg, Ni, Pb, Zn)	Other:	Other: SVOC (Low-level STL)	Other:	Field	Field	Field	Field	Field
LAB 060553	TAYLOR ELECTRIC SEWER SEDIMENT	5-24-06	11:AM	COMPOSITE G	/	X	/		X						

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.	Relinquished By: 4.
Signature: [signature] Time: 13:01	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: JOHN O'DONOVAN Date: 5/24/06	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Received By: 1.	**Received By: 2.**	**Received By: 3.**	**Received By: 4.**
Signature: [signature] Time: 1301	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Rona Klneh Date: 5/24/06	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:

City of Portland
Water Pollution Control Laboratory
Laboratory Analysis Report

Sample Date/Time 5/24/2006 11:11 **System ID** AK04652 **Sample ID** **LAB060553**

Page: 1

Proj./Company Name: SPCR-INVESTIGATIONS
Address/Location: TAYLOR ELECTRIC SEWER SEDIMENT

BUREAU: BES

Date Received: 5/24/2006
Sample Status: COMPLETE AND VALIDATED

Proj Subcategory: SPCR
Sample Point Code: 1
IMS File/Invoice #: 3050.005

Sample Type: COMPOSITE
Sample Matrix: SEDIMENT
Collected By: JO/TM

Comments: QA/QC: BASED ON LOW MATRIX SPIKE RECOVERY, THE RESULT FOR NWTPH-Gx MAY BE A LOW ESTIMATE DUE TO MATRIX INTERFERENCE.

Test Parameter	Result	Units	MRL	Method
METALS				
CADMIUM	1.85	mg/Kg dry wt	0.10	EPA 6020
CHROMIUM	53.1	mg/Kg dry wt	0.50	EPA 6020
COPPER	107	mg/Kg dry wt	0.25	EPA 6020
LEAD	544	mg/Kg dry wt	0.10	EPA 6020
MERCURY	1.12	mg/Kg dry wt	0.010	EPA 6020
NICKEL	52.4	mg/Kg dry wt	0.25	EPA 6020
SILVER	0.24	mg/Kg dry wt	0.10	EPA 6020
ZINC	637	mg/Kg dry wt	0.50	EPA 6020
TCLP METALS - 1				
LEAD	2.08	mg/L	0.010	EPA1311/6010
NWTPH-Gx - NCA				
GASOLINE RANGE HYDROCARBONS	4.76	mg/Kg dry wt	4.76	NWTPH-Gx
SEMI-VOLATILE ORGANICS, CUSTOM - STL				
1-Methylnaphthalene	180	µg/Kg dry wt	6.1	EPA 8270-SIM
2-Methylnaphthalene	200	µg/Kg dry wt	6.1	EPA 8270-SIM
Acenaphthene	22	µg/Kg dry wt	6.1	EPA 8270-SIM
Acenaphthylene	44	µg/Kg dry wt	6.1	EPA 8270-SIM
Anthracene	36	µg/Kg dry wt	6.1	EPA 8270-SIM
Benzo(a)anthracene	120	µg/Kg dry wt	6.1	EPA 8270-SIM
Benzo(a)pyrene	140	µg/Kg dry wt	6.1	EPA 8270-SIM
Benzo(g,h,i)perylene	140	µg/Kg dry wt	6.1	EPA 8270-SIM
Benzofluoranthenes	330	µg/Kg dry wt	12	EPA 8270-SIM
Chrysene	230	µg/Kg dry wt	6.1	EPA 8270-SIM
Dibenzo(a,h)anthracene	28	µg/Kg dry wt	6.1	EPA 8270-SIM
Fluoranthene	320	µg/Kg dry wt	6.1	EPA 8270-SIM
Fluorene	130	µg/Kg dry wt	6.1	EPA 8270-SIM

City of Portland
Water Pollution Control Laboratory
Laboratory Analysis Report

Sample Date/Time 5/24/2006 11:11 **System ID** AK04652 **Sample ID** **LAB060553**

Proj./Company Name: SPCR-INVESTIGATIONS
Address/Location: TAYLOR ELECTRIC SEWER SEDIMENT

BUREAU: BES

Date Received: 5/24/2006
Sample Status: COMPLETE AND VALIDATED

Proj Subcategory: SPCR
Sample Point Code: 1
IMS File/Invoice #: 3050.005

Sample Type: COMPOSITE
Sample Matrix: SEDIMENT
Collected By: JO/TM

Comments: QA/QC: BASED ON LOW MATRIX SPIKE RECOVERY, THE RESULT FOR NWTPH-Gx MAY BE A LOW ESTIMATE DUE TO MATRIX INTERFERENCE.

Test Parameter	Result	Units	MRL	Method
Indeno(1,2,3-cd)pyrene	90	µg/Kg dry wt	6.1	EPA 8270-SIM
Naphthalene	120	µg/Kg dry wt	6.1	EPA 8270-SIM
Phenanthrene	470	µg/Kg dry wt	6.1	EPA 8270-SIM
Pyrene	410	µg/Kg dry wt	6.1	EPA 8270-SIM
NWTPH-Dx				
#6 FUEL OIL	<1000	mg/Kg dry wt	1000	NWTPH-Dx
DIESEL	<500	mg/Kg dry wt	500	NWTPH-Dx
KEROSENE	<500	mg/Kg dry wt	500	NWTPH-Dx
MOTOR OIL	3420	mg/Kg dry wt	1000	NWTPH-Dx
NWTPH-HCID				
DIESEL	<50	mg/Kg dry wt	50	NWTPH-HCID
GASOLINE	DET	mg/Kg dry wt	20	NWTPH-HCID
HEAVY FUEL OIL	DET	mg/Kg dry wt	100	NWTPH-HCID
LUBE OIL	DET	mg/Kg dry wt	100	NWTPH-HCID
OTHER	<100	mg/Kg dry wt	100	NWTPH-HCID
Surrogate Recovery (%)	107	mg/Kg dry wt		NWTPH-HCID
POLYCHLORINATED BIPHENYLS (PCB)				
PCB 1016	<100	µg/Kg dry wt	100	EPA 8082
PCB 1221	<200	µg/Kg dry wt	200	EPA 8082
PCB 1232	<100	µg/Kg dry wt	100	EPA 8082
PCB 1242	<100	µg/Kg dry wt	100	EPA 8082
PCB 1248	<100	µg/Kg dry wt	100	EPA 8082
PCB 1254	<100	µg/Kg dry wt	100	EPA 8082
PCB 1260	510	µg/Kg dry wt	100	EPA 8082
PCB 1262	<100	µg/Kg dry wt	100	EPA 8082
PCB 1268	<100	µg/Kg dry wt	100	EPA 8082

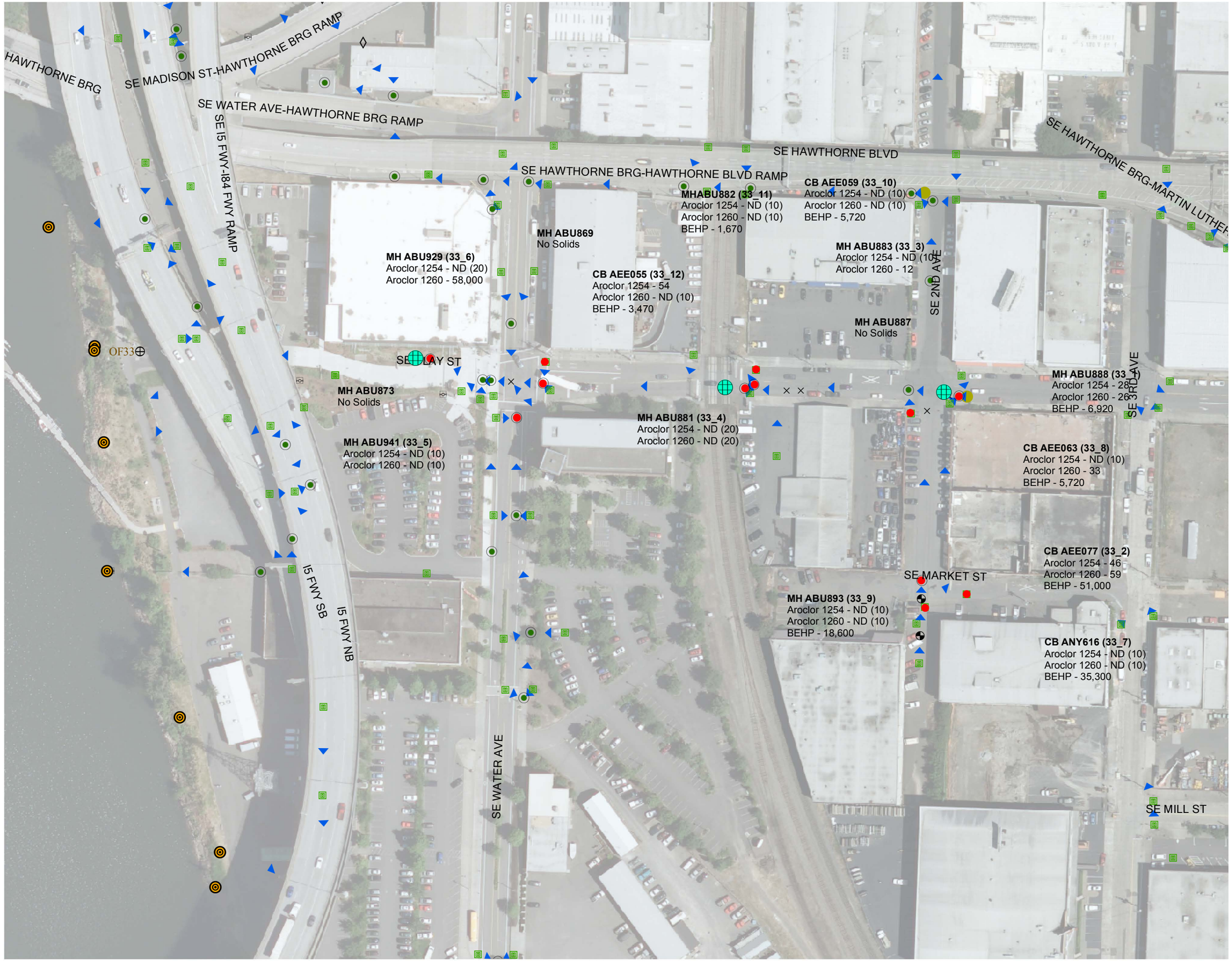
End of Report for Sample ID: LAB060553

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

Report Date: 8/2/2006

Validated By: Signature on File

2009 City Investigation of Outfall 33 System



Legend

- Sample Location
- Manhole (MH)
- Outfall (See attached letter)
- Non-City Outfall
- Storm Inlet (CB)
- Sediment Trap (Pending)
- Storm Line
- Abandoned Line
- Lateral
- Camera Survey November 2009
- Inline Solids Sampled August 2009
- Inline Solids Sampled November 2009

Notes:
Results are shown in ug/kg.
ND = Not detected. Detection limit shown in parenthesis.

N W E S

0 37.5 75 150 Feet

Information contained on this map is accurate according to available records, however, the City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published.

Figure 1
Basin 33 Inline Sample Locations & Preliminary Results

Source:
City of Portland 2009 Aerial

Environmental Services
City of Portland
1120 SW Fifth Avenue, Room 1000
Portland Oregon, 97204-1912

File Name:
s:\GIS\Corey Maps\OF33\OF33Sampling2009.mxd

Program Manager:
Rod Struck
Portland Harbor Superfund

Sheet No.
1 of 1

Date Printed:
03/22/2010

City of Portland
Environmental Services

DAILY FIELD REPORT

PTB 8/14/09

Project PORTLAND HARBOR INLINE SAMP
Project No. 1020.001
Location OF 33 BASIN 33
Date 8/4/09
Subject Inline Sediment Sampling (Day 1)
By PTB, MJS, ECH, LAP

PTB 8/6/09
TIMES IN DST

0855 ARRIVED ON-SITE AND SET UP TC AT ABU888 ON SW 2ND AVE AND SW CLAY. PTB AND MJS TO CONDUCT SAMPLING AT ABU888. ECH AND LAP TO CONDUCT SAMPLING AT AEE077. AT ABU888 SAMPLING IN MH AND IN LINE FROM SOUTH.

0930 ROD STRUCK MET JS ON-SITE TO OBSERVE SAMPLING AND PROVIDE GUIDANCE.
MJS PERFORMED ENTRY AND VERIFIED NO SAMPLEABLE SOLIDS IN PRIVATE LINE TO SOUTH OR IN MAIN INVERT OF MH. ONLY SOLIDS SAMPLED WERE ON DS SIDE.
0954 SAMPLE COLLECTION COMPLETED. AT ABU888 AS 33-1

1015 CHECKED IN W/ AEE077 SAMPLING. ENOUGH SOLIDS FOUND. OBSERVED CONSTRUCTION ACTIVITIES CONNECTING A STORMWATER LINE INTO ABU893. IF SAMPLING NOT POSSIBLE TOMORROW MOVE UP TO CB TO SOUTH.
AEE077 SAMPLE WILL BE 33-2.
SPOKE WITH ROD REGARDING ALTERNATE SITES AND CLARIFIED THAT ORIGINAL SITES WOULD STILL BE VERIFIED PRIOR TO SAMPLING AT ALTERNATE SITES.

1100 SET UP AT ABU887 WITH TC. TO VERIFY SOLIDS PRESENCE/ABSENCE. ENTRANT CONFIRMS NO SOLIDS PRESENT AT ANY POINT WITHIN MH OR INLETS. NO SAMPLE. POSSIBLY DUE TO CLEANING THAT OCCURRED AFTER THE NEARBY FIRE, APPROX. 4 YEARS AGO.

Attachments

City of Portland
Environmental Services

DAILY FIELD REPORT

PTB 8/10/09

Project Portland Harbor Inline Sed Samp
Project No. 1020-001
Location BASIN 33
Date 8/4/09
Subject Inline Sediment Sampling Activities (Day 1)
By PTB, MSS, ECH, CAP

TIMES IN PDT. PTB 8/10/09

1121 SET UP AT ABU883, ORIGINAL SITE FROM THE WORK ORDER. DIFFICULTIES OPENING MH LID. FABRIC FILTER FITTED UNDER MH LID. STANDING WATER IN MH INVERT WITH VISIBLE OIL SHEEN FROM TOPSIDE. AND SOLIDS IN UPSTREAM SIDE OF MH.

1149 PTB 8/11/09
~~1211~~ SAMPLE COLLECTION AT ABU883 COMPLETE. GIVEN POINT CODE 33-3.

1248 SET UP AT ABU881. PRIMARY SITE FROM WORK ORDER. ABLE TO COLLECT TWO 4.02. JARS TO 7/8 FULL.

1307 PTB 8/11/09 SAMPLE COLLECTION WAS PERFORMED ALTERNATING SCOOPS INTO EACH OF THE TWO COMPOSITE JARS. EFFECTIVELY SPLITTING THE SAMPLE. THESE SAMPLES WERE GIVEN THE POINT CODE 33-4

1333 CHECKED ABU941 FOR POTENTIAL FURTHER SAMPLING. THIS SITE IS THE ALTERNATE FOR ABU881 AND WILL BE SAMPLED TO GET ALL OF THE ANALYTES REQUESTED AS AT ABU881 ONLY 2 JARS WERE PARTIALLY FILLED.

1348 COLLECTED SAMPLE AT ABU941. POINT CODE 33-5.

1406 SPOKE WITH ROD REGARDING SUBMITTAL OF BOTH ABU881 AND ABU941. HE INDICATED HE WOULD LIKE BOTH SUBMITTED, SINCE 2 JARS WAS THE MINIMUM AMOUNT REQUESTED. RETURNED TO WDCL

Attachments

City of Portland
Environmental Services

DAILY FIELD REPORT

Page 1B of 1B

PTB 8/10/09

Project Portland Harbor
Location OF 33 BASIN
Subject Inline Sed sampling

Project No. 1070.001
Date 8/4/09
By ECH, LAP

TIMES IN DST
PTB 8/10/09

0919 Arrive on site at 2nd and Clay to sample (DST) solids from catch basin (AEE077). Liner in catch basin. Construction in intersection. Removing liner per PTB → downstream of CB at ABU893 PTB 8/10/09.

1002 Completed photos, map, pre sample notes. Rod Struck on site. Beginning to remove sediments from catch basin.

1018 Begin homogenization of sample in bowl. Debris removed

1026 Sample collected. 4 full 4 oz jars

1030 Construction in intersection (per crew) → Adding stormline from industrial yard. Tying into storm line at node ABU89B (where CB line ties into). It appears line has been jetted.

Attachments

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

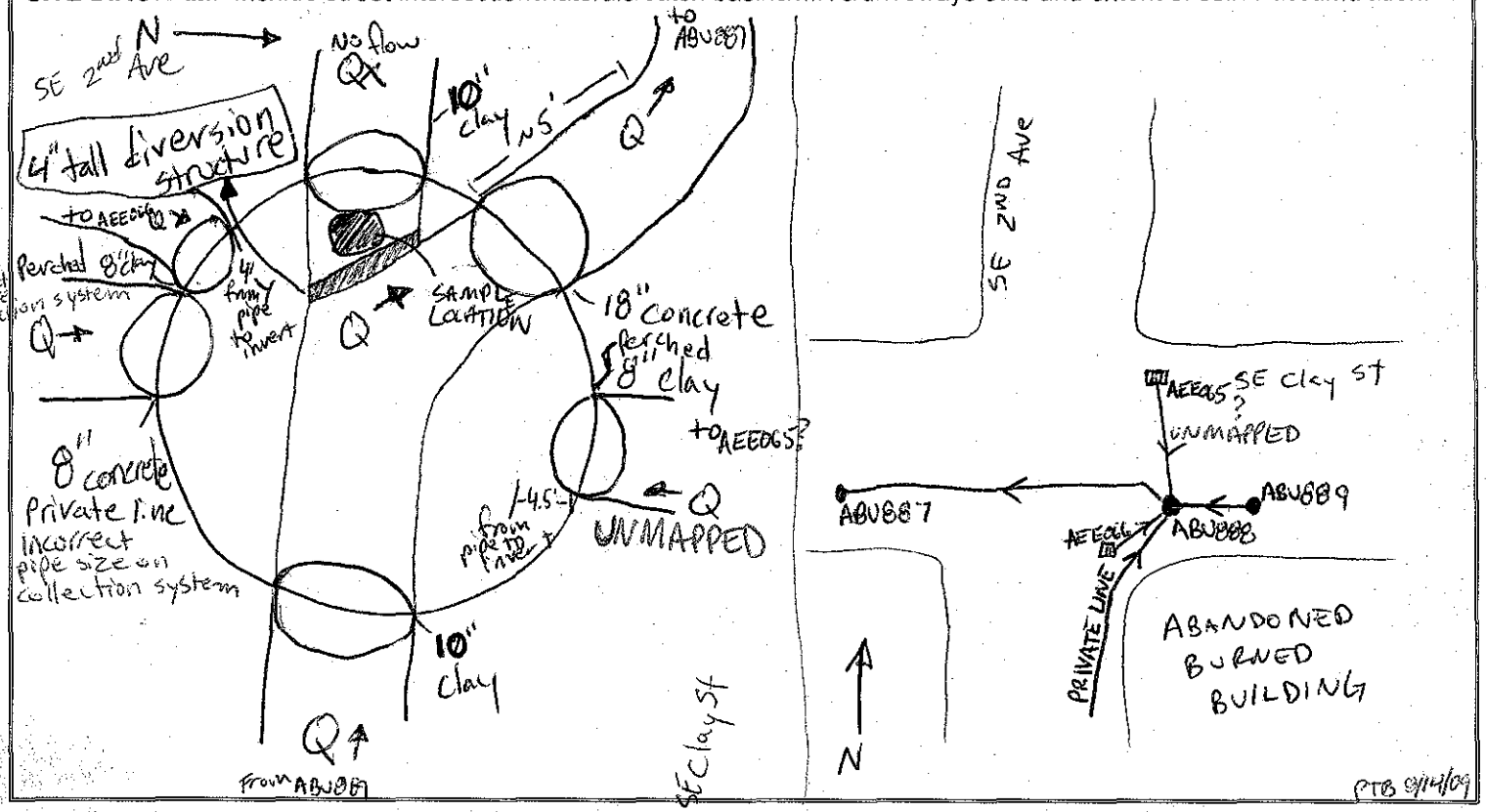
INLINE SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Portland Harbor Inline Sed Samp			Project Number: 1020.001
Sampling Team: PTB, MJS	Date: 8/4/09	Arrival Time: 0855 DST	Current Weather Conditions/Last Rain: Sunny + Warm / ~1 month ago
Basin: 33	Node: ABU888		Subbasin: NA
Sampling Location Description/Address: 240 SE Clay Street			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	No flowing or standing water, however invert is wetted.
Does river appear to back up to this location? Describe rate/color/odor of flow:	No, river does not appear to back up to this location.
Are sediments observed in the line?	No, sediments are not observed inline. Only solids observed are on downstream side of diversion, out of main flow.
Are sample-able quantities of sediments present in the line?	Sampleable quantities are present on downstream side of diversion.
Describe lateral extent of sample-able sediments present in the line:	3" square, ~1" deep of sample-able solids on downstream side of diversion

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.



Date: 8/4/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ABU888

Sampling Equipment:	☒ Stainless steel spoon & ~~stainless steel bucket~~ ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a ☐ Other (Describe)
Sample date: 8/4/09 / Sample time: 0954	Sample Identification: (IL-XX-NNNNNN-mmyy) IL-33-ABU888-0809
Sample location description: (number of feet from node of entry)	4-6" downstream of diversion in main invert of MH in ~3" square area.
Sample collection technique:	Using a stainless steel spoon to scoop sediments directly into a 4 oz. collection jar. All material was collected.
Describe Color of sample:	Dark brown with flecks of red from brick or clay.
Describe Texture/Particle size:	Fine silts to clays at 99% w/ 1% debris mostly organic with some brick or clay
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	No visual or olfactory evidence of contamination.
Describe depth of solids in area where sample collected:	~1" in depth of total solids were sampled within the sample location.
Describe amount and type of debris in sample:	~1% debris consisting of organics and some brick or clay.
Amount and type of debris removed from final sample:	Nothing was removed from the final sample.
Compositing notes:	Sample was composited in the sample jar using the stainless steel spoon used for sample collection.
Sample Jars Collected (number, size, full or partial)?	(1) 4 oz. jar was collected to ~ 2/3 full

If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).	(1) 2/3 full 4 oz. jar	PCB Aroclors	TOC	Total Solids
		PAH + Phthalates		

Lab ID FO095788	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures: None	

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	#5 looking SE to ABU888
Plan view of sediments inline	#3 has sediments to be sampled
Homogenized sample (sediment in bowl)	#4 homogenized sample in collection jar.
Other?	#1 looking up lateral from south. #2 main outlet, #3 overflow outlet.

Photo No.

ABU888 – 1 – Lateral from south

Photo No.

ABU888 – 2 – Main outlet

Outfall 33 – 2009 COP sampling event

Photo No.

ABU888 – 3 – Diversion and sample location

33_2

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

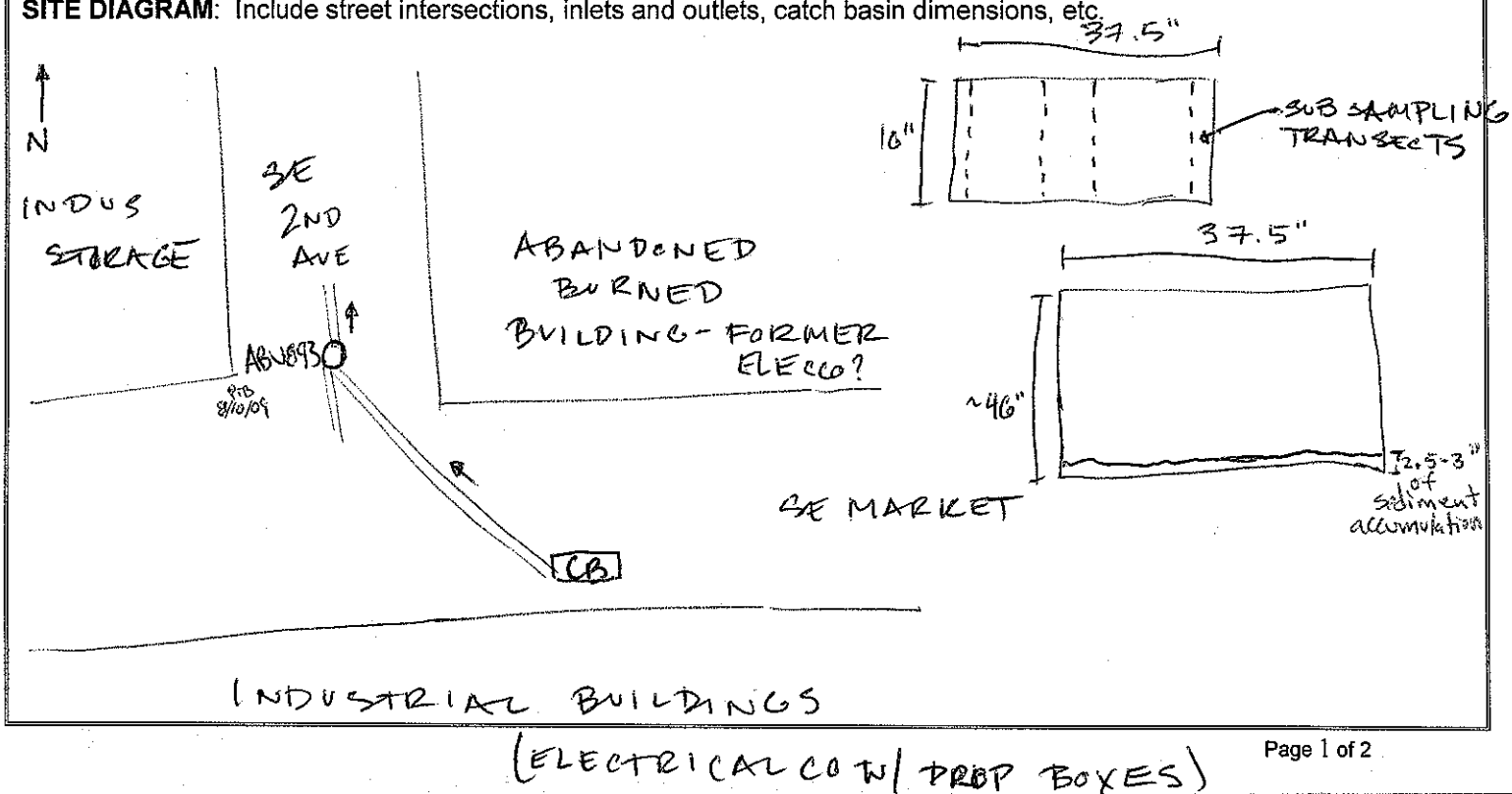
CATCH BASIN SOLIDS SAMPLING
FIELD DATA SHEET

Project Name: ~~EC~~ PORTLAND HARBOR INLINE SED		Project Number: 1020.001
Sampling Team: ECH, LAP	Date: 8/4/09	Arrival Time: 0919 DST
Basin: 33	Node: AEE077	Address: SE 2nd + ~~Clay~~ Market PTB 8/4/09
Current weather and last known rainfall: 80's + SUNNY, HASN'T RAINED IN ~1 MONTH		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe potential solids or contaminant sources that could impact catch basin (const. activities, erosion, vehicles, material storage, onsite processes, etc.):	SIDE STREET-HIGH TRUCK TRAFFIC, BURNED ELECTRICAL BUILDING, ABANDONED, CONTRUCTION JUST OUTSIDE OF COLLECTION AREA, POWERPOLES
Describe debris and/or clogging around, or in catch basin grate/cover:	FILTER FABRIC AT TOP OF CB - HAS CAUGHT ORGANICS, CIGG BUTTS, PLASTICS, PAPER, GENERAL TRASH, ROOFING PAPER? ECH METAL, BURNED WOOD BUT MOSTLY ORGANICS. SED-SAND.
Is there standing water in catch basin?	NO
Describe visual or olfactory observations of contamination at catch basin if any (odor, sheen, discoloration, etc.)	NONE OBSERVED
Describe depth of sediments present in catch basin and the total depth of the catch basin or sump:	ABOUT 2.5" x to 3" SED IN CB. ~~SM~~ ECH. CB APPEARS TO BE ~46" DEEP. LOTS OF TRASH IN CB - ALUM CANS, METAL SIGN

SITE DIAGRAM: Include street intersections, inlets and outlets, catch basin dimensions, etc.



Date: 8/4/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ~~ECH~~ AEE ~~AEE~~ 077

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ OTHER (DESCRIBE)
Equipment decontamination procedure:	☒ Per SOP7.01a ☐ OTHER (DESCRIBE)
Sample date: 8/4/09	Sample time: 1026
Sample Identification Code: IL-33-~~AAE~~ ECH ~~AEE~~077-0809	Sample collection technique and if/how overlying water was removed: NO OVERLYING WATER IN CB. SAMPLE SPOONED INTO BOWL.
Subsample number and location:	COLLECTED 3-4 SUBSAMPLES FROM FOUR TRANSECTS IN BASIN (SEE MAP).
Color of sample:	DARK BROWN (WITH BLUE FROM PAINT)
Texture/particle size:	85% SILTY SAND, 10% ORGANICS, 5% INORG-TRASH
Visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.)	NONE APPERENT WITH THE EXCEPTION OF BLUE PAINT. * BUT CONSTRUCTION VEHICLE RUNNING AND FRESH ASPHALT PATCHING (COLD) DURING HOMOG + SAMPLING.
Amount and type of debris in bulk sample:	5% - PLASTICS, LEAVES, ROOTS
Amount and type of debris removed from final sample:	↓ REMOVED * ECH 8/6/09 ABOUT 25% OF MATERIAL IN CB WAS TRASH (PLASTIC, METAL) AND LEAVES, AND WAS EXCLUDED FROM BULK SAMPLE MB 8/10/09
Compositing notes:	HOMOGENIZED, DEBRIS REMOVED ↳ IN SAMPLE COLLECTION BOWL USING SPOON USED FOR SAMPLE COLLECTION. MB 8/10/09
Sample jars collected (number, size, full or partial)?	4, FULL 4 OZ JARS
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).	
Lab ID FO 095789 MB 8/10/09	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	NA
Any deviations from standard procedures:	No

SECTION 3 - PHOTOGRAPH LOG

Overview of CB showing drainage area	1, 2
Catch basin plan view prior to sampling showing solids	3, 4 (prior to liner removal) 7 (post removal) 13 (paint on CB wall)
Lateral connections to/from CB	5
Homogenized sample (sediment in bowl)	~~10, 11, 12~~ 14, 15 ECH (pre homog), 16 (post homog)
Filter Fabric	6
Burned wood (from fire)	8, 9

Photo No.

AEE077 – 6 – Filter sock contents

Photo No.

AEE077 – 7 – Plan view

CITY OF PORTLAND

ENVIRONMENTAL SERVICES

Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

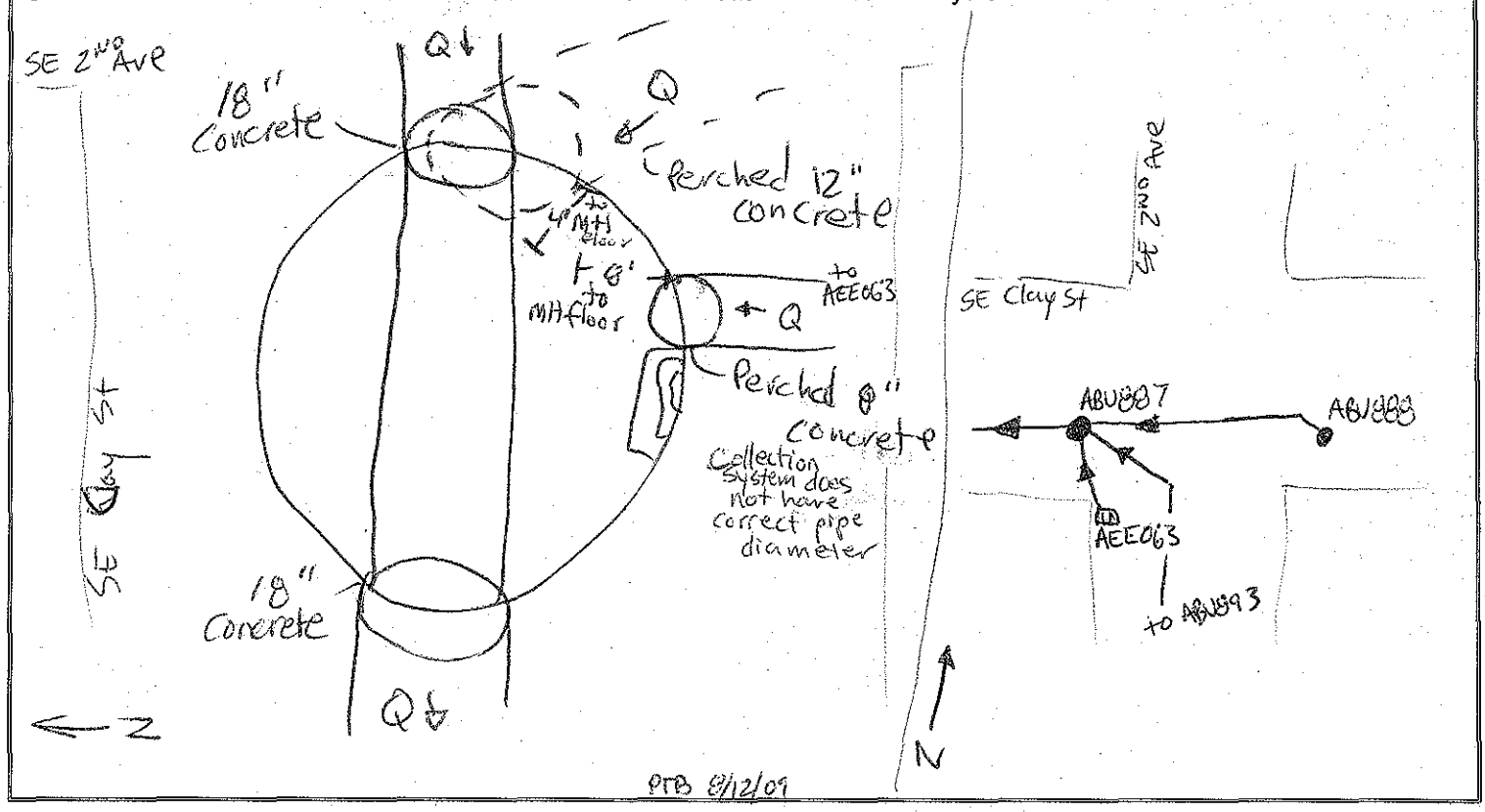
INLINE SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Portland Harbor Inline Sed Samp			Project Number: 1020.001
Sampling Team: PTB, MJS, ECH, LAP	Date: 8/4/09	Arrival Time: 1100	Current Weather Conditions/Last Rain: Sunny + Warm / ~1 month
Basin: 33	Node: ABU 887		Subbasin: NA
Sampling Location Description/Address: SE Clay St and 2nd Avenue			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	No flowing or standing water observed in the line.
Does river appear to back up to this location? Describe rate/color/odor of flow:	River does not appear to back up to this location.
Are sediments observed in the line?	NO, pipe is clean and free of solids.
Are sample-able quantities of sediments present in the line?	NO, no solids are present.
Describe lateral extent of sample-able sediments present in the line:	N/A

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.



PTB 8/12/09

Date: 8/4/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ABV887

Sampling Equipment:		☐Stainless steel spoon & stainless steel bucket ☐ Other (Describe)
Equipment Decontamination process:		☐ Per SOP7.01a ☐ Other (Describe)
Sample date:	Sample time:	Sample Identification: (IL-XX-NNNNNN-mmyy)
Sample location description: (number of feet from node of entry)		NO SAMPLE WAS COLLECTED NO SOLIDS WERE PRESENT.
Sample collection technique:		
Describe Color of sample:		
Describe Texture/Particle size:		

Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	
Describe depth of solids in area where sample collected:	
Describe amount and type of debris in sample:	
Amount and type of debris removed from final sample:	
Compositing notes:	
Sample Jars Collected (number, size, full or partial)?	

If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				
Lab ID	Duplicate sample collected? Y/N		Dupe ID	
Duplicate sample identification # on COC:				
Any deviations from standard procedures:				

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	
Plan view of sediments inline	
Homogenized sample (sediment in bowl)	
Other?	

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

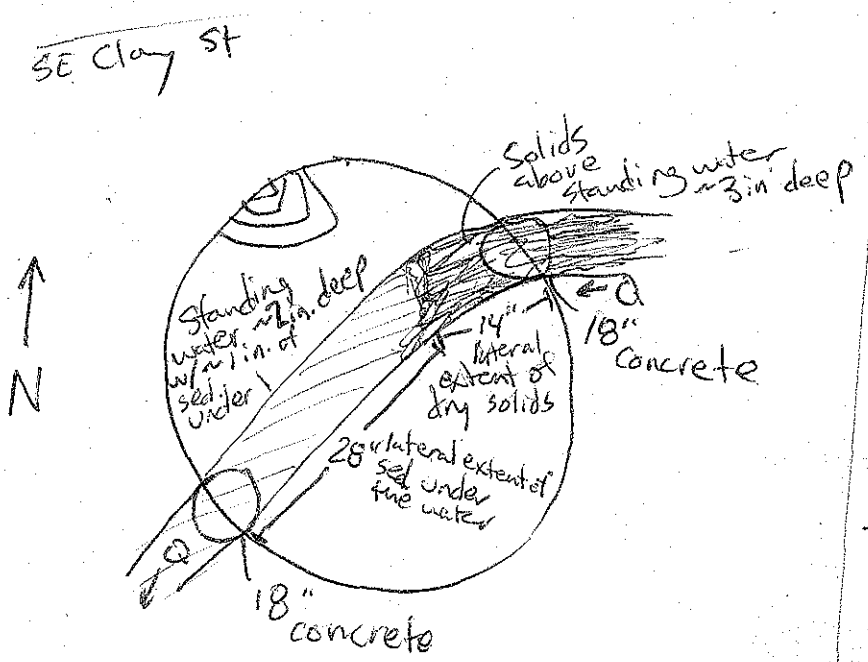
INLINE SEDIMENT SAMPLING FIELD DATA SHEET

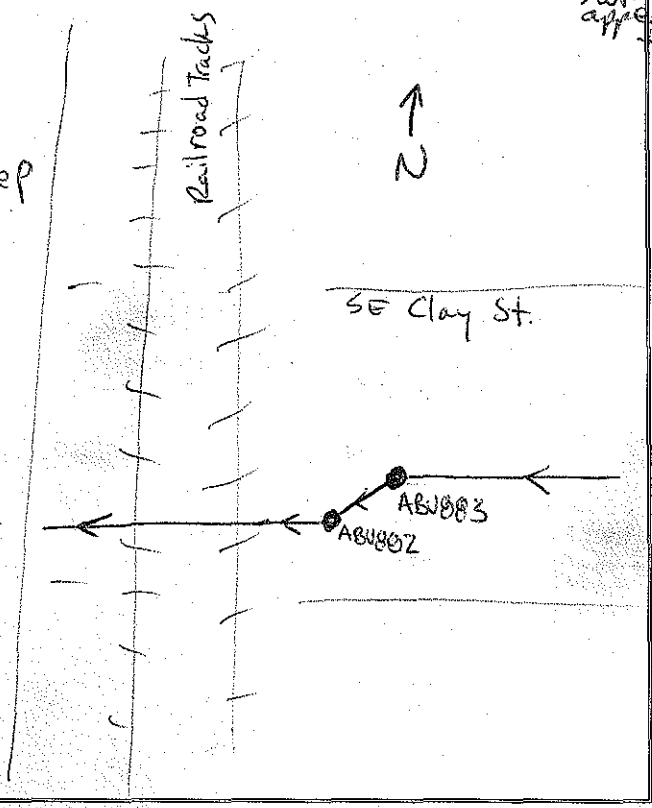
Project Name: Portland Harbor Inline Sed Samp			Project Number: 1020-001
Sampling Team: PTB, MJS, ECH, LAP	Date: 8/4/09	Arrival Time: 1121	Current Weather Conditions/Last Rain: Sunny + warm/~1 month ago
Basin: 33	Node: ABV883		Subbasin: NA
Sampling Location Description/Address: 120 SE Clay St			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	Standing water is present in line approx. 2 inches in depth downstream of bend in main invert.
Does river appear to back up to this location? Describe rate/color/odor of flow:	No, river does not appear to back up to this location.
Are sediments observed in the line?	Yes, sediment exists upstream of bend and under the water to the edge of MH chamber
Are sample-able quantities of sediments present in the line?	Yes, sediment is sampleable at all points where it is found w/in the MH chamber.
Describe lateral extent of sample-able sediments present in the line:	Sediment is 3 in. deep upstream from bend where it is above the water. Under the water it is 1 in. deep. Sediment ~~extends upstream as far as entrance~~ can see. Sediment may exist below water downstream but does not appear to.

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.





33-3

Date: 8/4/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ABV883

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a ☐ Other (Describe)
Sample date: 8/4/09 / Sample time: 1149	Sample Identification: (IL-XX-NNNNNN-mmyy) IL-33-ABV883-0809
Sample location description: (number of feet from node of entry)	In invert of MH chamber under the standing water from 8' edge of MH upstream to bend where dry solids start where 3 scoops were taken w/in MH chamber
Sample collection technique:	Using a stainless steel scoop into sed. under the water, decanting water from scoop and adding to bucket. When sed. is dry using scoop directly into bucket
Describe Color of sample:	Dark brown with red pebbles and white flecks
Describe Texture/Particle size:	80% sands, <1% fines, 18% coarse pebbles gravels, <1% debris (glass, worms, metal)
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	Sheen on water broke up upon contact. No sheen on sediment. No olfactory evidence of contamination.
Describe depth of solids in area where sample collected:	Sed. was 3 in. deep upstream from bend where it was dry and 1 in. deep under the 2" water layer.
Describe amount and type of debris in sample:	<1% debris incl. glass, worms & metal.
Amount and type of debris removed from final sample:	All debris was removed as well as most of the large gravels.
Compositing notes:	Sample was homogenized using a clean stainless steel spoon excluding large gravels in the process while in bucket.
Sample Jars Collected (number, size, full or partial)?	4 full 4oz. jars
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).	
Lab ID F0Ø95790	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures:	None

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	1221 - From N looking S
Plan view of sediments inline	1217 - Close-up of sample area
Homogenized sample (sediment in bowl)	1218 - Sample in bucket 1220 - Homogenized
Other?	~~1210 jpg - overview of MH from point in MH~~ 1212 - DS of MH chamber 1213 - US of MH chamber

Photo No.

ABU883 – 1213 – Main inlet

Photo No.

ABU883 – 1212 – Main outlet

Photo No.

ABU883 – Close up of water soil interface

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

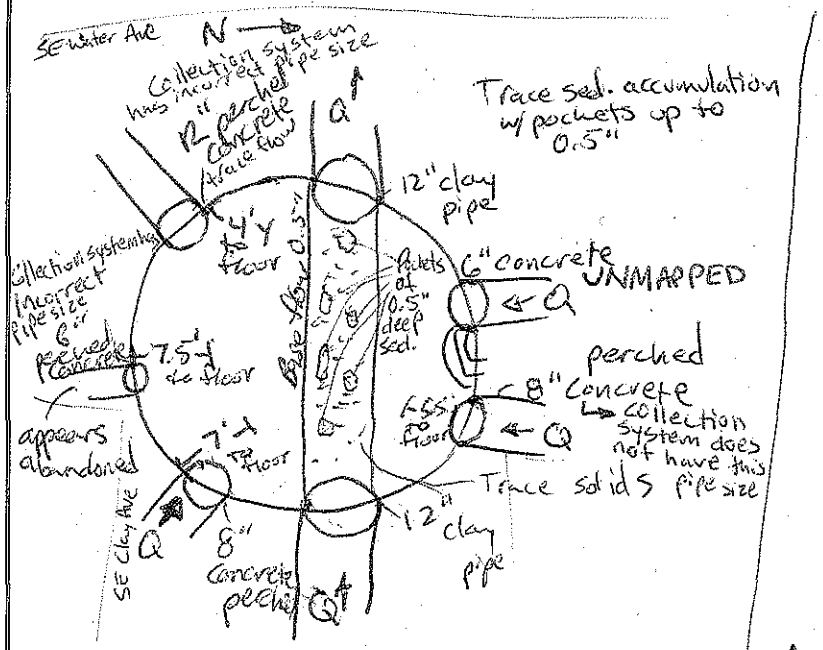
INLINE SEDIMENT SAMPLING FIELD DATA SHEET

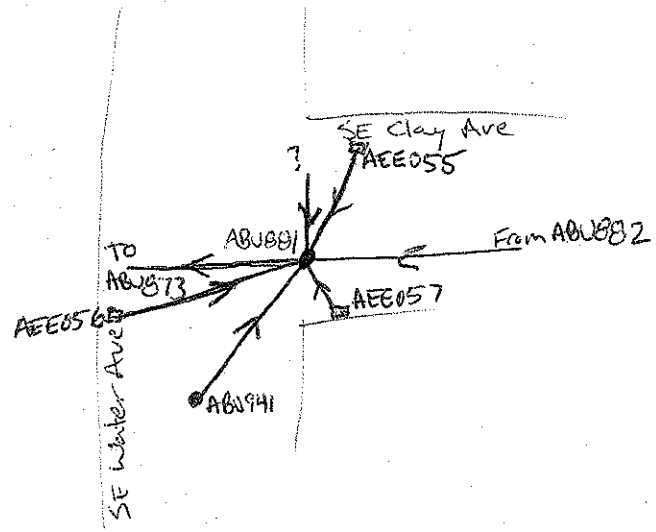
Project Name: Portland Harbor Inline Sed Samp			Project Number: 1020.001
Sampling Team: MJS, PTB, LAP, ECH	Date: 8/4/09	Arrival Time: 1248	Current Weather Conditions/Last Rain:
Basin: 33	Node: ABU881		Subbasin: NA
Sampling Location Description/Address: SE Clay St and Water Ave			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	Flowing water downstream ~~to~~ toward river at ~0.5" in depth
Does river appear to back up to this location? Describe rate/color/odor of flow:	River does not appear to back up to this location
Are sediments observed in the line?	Yes, trace solids in MH invert with pockets up to 0.5"
Are sample-able quantities of sediments present in the line?	Yes, the seds can be scraped using a spoon ~~and yet~~ Enough sed. to fill at least one jar.
Describe lateral extent of sample-able sediments present in the line:	Trace solids exist throughout MH chamber invert with pockets (2-3" in lateral extent) up to 0.5" in depth.

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.





N

PTB 8/11/09

33-4

Date: 8/4/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ABU881

Sampling Equipment:	☒ Stainless steel spoon ~~& stainless steel bucket~~ ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a ☐ Other (Describe)
Sample date: 8/4/09 / Sample time: 1307	Sample Identification: (IL-XX-NNNNNN-mmyy) IL-33-ABU881-0809
Sample location description: (number of feet from node of entry)	Sample collected from entire invert w/in the MH chamber.
Sample collection technique:	Spoon is used to scoop solids into ~~the~~ two alternating sample jars creating a split sample removing all solids on MH chamber invert
Describe Color of sample:	Dark brown w/ flecks of red
Describe Texture/Particle size:	10% sand, 90% fine clay and silt particles (almost like a biofilm)
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	No visual or olfactory evidence of contamination.
Describe depth of solids in area where sample collected:	Solids are accumulated in trace amounts with pockets up to 0.5" in depth.
Describe amount and type of debris in sample:	No debris in sample.
Amount and type of debris removed from final sample:	NA
Compositing notes:	Each jar was composited independently in its own respective jar. Each scoop into the jar alternating makes this a split sample.
Sample Jars Collected (number, size, full or partial)?	(2) 4 oz. jars 7/8 full

If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				
	7/8 full 4oz. jar	PCB, Aroclors		
	7/8 full 4oz. jar	Total Solids	TOC	

Lab ID FO095791	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures:	Initial observations suggested there would only be enough sample for a single jar (4oz.). Decision made to preserve as much sample as possible (or not to lose any during transfer from composite bowl to sample jar) and fill directly into two jars. To achieve ample volume for the requested analyses.

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	1224
Plan view of sediments inline	1222 + 1223
Homogenized sample (sediment in bowl)	1225
Other?	~~1223~~

Photo No.

ABU881 – 1222 – Close up of sediments inline

Photo No.

ABU881 – 1223 – Overview of MH

33-5

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ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

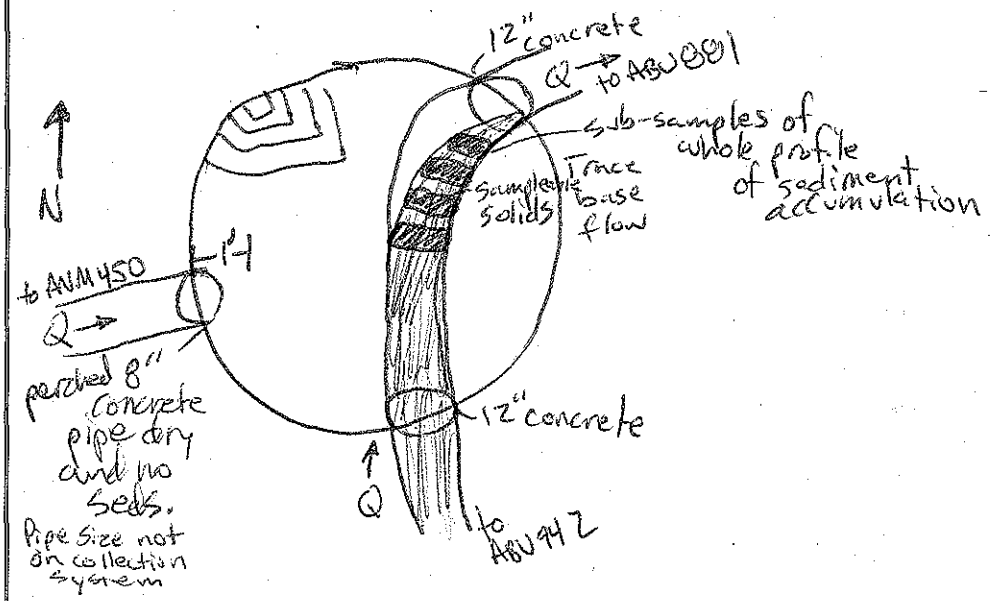
INLINE SEDIMENT SAMPLING FIELD DATA SHEET

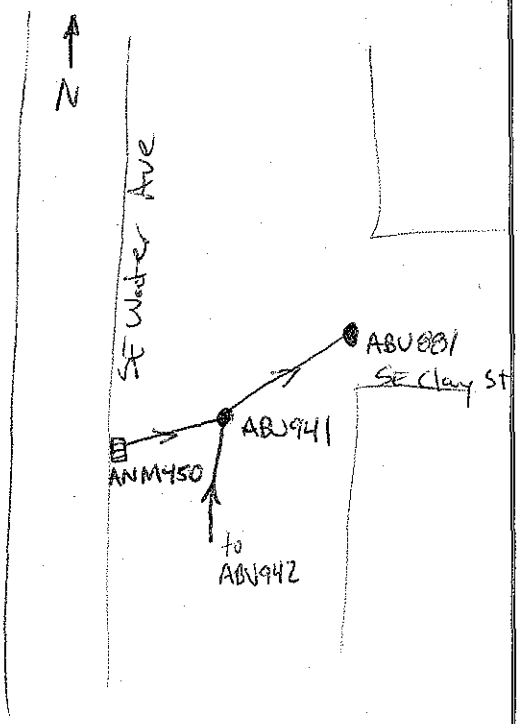
Project Name: Portland Harbor Inline Sed Samp			Project Number: 1020.001
Sampling Team: MJS, PTB, ECH, LAP	Date: 8/4/09	Arrival Time: 1333	Current Weather Conditions/Last Rain: Sunny + Warm / ~1 month ago
Basin: 33	Node: ABU941		Subbasin: NA
Sampling Location Description/Address: SE Water Avenue at SE Clay Street			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	No flowing or standing water in line.
Does river appear to back up to this location? Describe rate/color/odor of flow:	River does not appear to back up to this location.
Are sediments observed in the line?	Yes, there are extensive solids in line.
Are sample-able quantities of sediments present in the line?	Yes, sediment on average is 1.5" deep up to 2.5" deep.
Describe lateral extent of sample-able sediments present in the line:	Sample-able sediments extend from main invert in MH chamber upstream as far as entrant can see.

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.





PTB 8/11/09

33_5

Date: 8/4/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ABU941

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a ☐ Other (Describe)
Sample date: 8/4/09 / Sample time: 1348	Sample Identification: (IL-XX-NNNNNN-mmyy) IL-33-ABU941-0809
Sample location description: (number of feet from node of entry) Four subsamples were taken perpindicular to main flow the width (3") of the scoop and of the whole profile of accumulation.	
Sample collection technique:	Samples were taken on ds portion of MH chamber invert at four subsampled locations. described above (see SITE DIAGRAM)
Describe Color of sample:	Dark greyish brown with multi colored sands
Describe Texture/Particle size:	80% sands, 5% fines, 15% coarse gravels & pebbles, <1% debris
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	No visual or olfactory evidence of contamination.
Describe depth of solids in area where sample collected:	Solids were 1.5-2.5" deep in sample collection area.
Describe amount and type of debris in sample:	< 1% glass and metal debris.
Amount and type of debris removed from final sample:	Removed glass, metal and large gravels, ~10%
Compositing notes: Sample was composited in the sample collection bucket and the sample collection spoon was used to fill the composite jars.	
Sample Jars Collected (number, size, full or partial)? 4 full 4oz. jars	

If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				

Lab ID F0Ø95792	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures: None	

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	(Y) 1226
Plan view of sediments inline	(Y) 1228 PRIOR TO SAMPLING 1229 POST-SAMPLING
Homogenized sample (sediment in bowl)	(Y) 1230
Other?	

Photo No.

ABU941 – 1228 – Plan view of sediments inline

Photo No.

ABU941 – 1229 – Plan view of sediments after sampling

City of Portland
Environmental Services

DAILY FIELD REPORT

Project Portland Harbor Inline Sed Samp
Project No. 1020.001
Location BASIN 33
Date 8/5/2009
Subject Day 2 of Sampling Activities
By PTB, JXB

TIMES IN DST
PTB 8/10/09

0902 ARRIVE ON-SITE AT ABU893. MH IS COVERED BY STEEL PLATE AND SEALED WITH ASPHALT. PER DISCUSSION W/ ROD STRUCK VIA PHA SAMPLE NEW ALTERNATE LOCATION OF ANY616, CB TO S OF ABU893. THIS CB IS RECOGNIZED IN BES'S COLLECTION SYSTEM ~~&~~ IS AS PRIVATELY OWNED. AND TYING INTO A PRIVATELY OWNED PIPE THAT THEN FLOWS INTO ABU893.

0939 REMOVED FABRIC FROM CB. CB IS FULL OF WATER WITH ~~15"~~ 10" OF SOLIDS AT BASE (SANDY TO COARSE) TOTAL CB DEPTH IS 28". WATER IS RED IN COLOR WITH SHEEN ON SURFACE AS WELL STYROFOAM BITS. SMELL IS LIKE WASTEWATER FROM FOOD PRODUCTION. CB HAS BAFFLE SYSTEM. PHOTO 0678 OF CB WITH WATER. CB IS 24" x 24". CB IS NON-SAMPLEABLE CURRENTLY. OPTIONS INCLUDE PONAR OR ECKMAN DREDGE OR USE OF A VACTOR TO REMOVE OVERLYING WATER. REQUIRE GUIDANCE BEFORE FURTHER ACTION IS WARRANTED.

1000 ARRIVE ON-SITE ABU869. ENTRANT VERIFIES NO SAMPLEABLE SOLIDS. ONLY TRACE AMOUNTS CEMENTED IN. NO SAMPLE TAKEN. NO ALTERNATE FOR THIS SITE.

1027 SET UP FOR ABU873. POPPED MH. FLOWING WATER PRESENT. COBBLES WERE ONLY SEDIMENT OBSERVED. NOT SAMPLEABLE. NO SAMPLE COLLECTED

PTB 8/12/09

Attachments

City of Portland
Environmental Services

DAILY FIELD REPORT

Project Portland Harbor Inline Sed Samp
Location BASIN 33
Subject Day 2 of Sampling Activies

Project No. 1020.001
Date 8/5/2009
By PTB, IXB

TIMES IN DST 8/4/09 PTB

1056 SET UP AT ABU929. NO RUNGS SO WINCH WILL BE USED. FLOWING WATER PRESENT. MINIMAL SOLIDS. COLLECTED 1 FULL 4 OZ. JAR. SAMPLE TIME 1120 POTENTIALLY 33-6. SEDIMENTS WERE ONLY FOUND IN THE MH CHAMBER AND AT TRACE AMOUNTS (MAX DEPTH OF ¼"). SOME QUESTION EXISTS AS TO IF THE SEDIMENTS OBSERVED WERE FROM THE ACT OF ENTERING THE MH OR IF THEY WERE ALREADY PRESENT. THE SAMPLE DOES CONTAIN FISH OR FROG EGGS WHICH MAY SUGGEST THE SEDIMENT COLLECTED WAS FROM PRIOR TO ENTRY. POINT CODE 33-6 ATTRIBUTED TO SAMPLE FOR SUBMITTAL AS REQUESTED BY THE CUSTOMER PTB 8/12/09

1202 PER CUSTOMER REQUEST AN INVESTIGATION INTO THE TRUE OUTFALL FOR BASIN 33 WILL BE CONDUCTED POTENTIALLY USING A DYE TEST.

1221 INSPECTION OF OUTFALLS SHOWS NO FLOW SO DYE TEST IS OUT OF THE QUESTION. CANNOT CONFIRM CORRUGATED COLLAPSED PIPE AS OUTFALL. HOWEVER BASED ON LINE OF SITE IF PIPE TO OUTFALL IS STRAIGHT, THE CORRUGATED COLLAPSED PIPE LINES UP PERFECTLY. SUGGEST TV'ing THE LINE TO ACHIEVE CONFIRMATION.

Attachments

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, OR 97203-5452

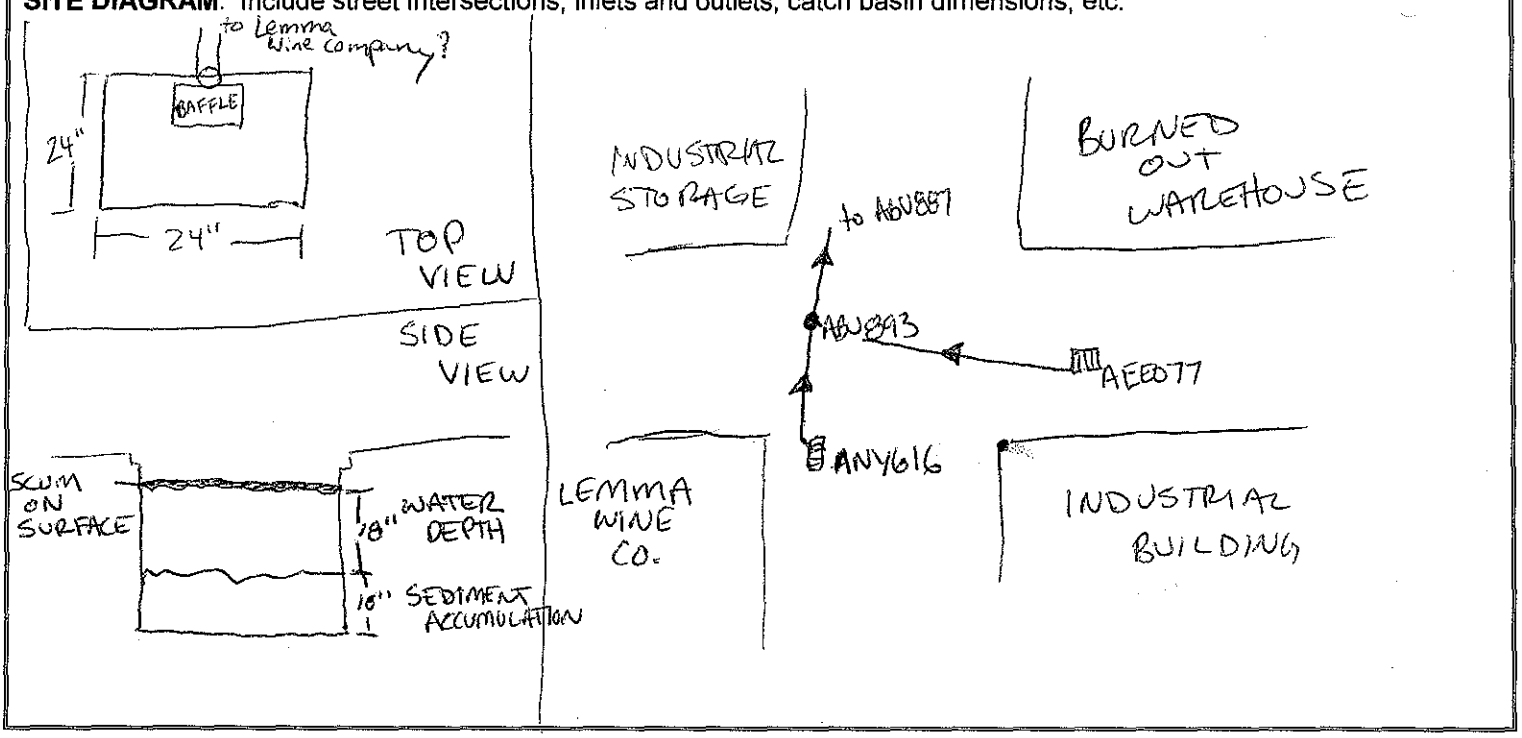
CATCH BASIN SOLIDS SAMPLING
FIELD DATA SHEET

Project Name: Portland Harbor Inline Sed Samp		Project Number: 1020.001
Sampling Team: PTB, JXB	Date: 8/5/09	Arrival Time: 0902
Basin: 33	Node: ANY616	Address: NA
Current weather and last known rainfall: Overcast, warm / ~1 mo. ago		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe potential solids or contaminant sources that could impact catch basin (const. activities, erosion, vehicles, material storage, onsite processes, etc.):	Current construction activities nearby at ABU893 connecting a storm line. CB adjacent to two parking spaces. Across intersection to sw from burned electrical building/warehouse.
Describe debris and/or clogging around, or in catch basin grate/cover:	Grate is clear of solids. Filter fabric in place under grate has plastics and leaves in it.
Is there standing water in catch basin?	Yes, there is approx. 18" standing water.
Describe visual or olfactory observations of contamination at catch basin if any (odor, sheen, discoloration, etc.)	Surface of water has sheen and red substance that fractures when probed. Strong decomposing food waste odor.
Describe depth of sediments present in catch basin and the total depth of the catch basin or sump:	Sediment depth is approx. 10" and the total depth of the CB is 28".

SITE DIAGRAM: Include street intersections, inlets and outlets, catch basin dimensions, etc.



Date: 8/5/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: AN4616

Sampling Equipment:	☐Stainless steel spoon & stainless steel bucket ☐ OTHER (DESCRIBE)
Equipment decontamination procedure:	☐ Per SOP7.01a ☐ OTHER (DESCRIBE)
Sample date:	Sample time:
Sample Identification Code:	Sample collection technique and if/how overlying water was removed: NO SAMPLE COLLECTED. Proper equipment not currently available.
Subsample number and location:	
Color of sample:	
Texture/particle size:	
Visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.)	
Amount and type of debris in bulk sample:	
Amount and type of debris removed from final sample:	
Compositing notes:	
Sample jars collected (number, size, full or partial)?	

If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				

Lab ID	Duplicate sample collected? Y/N Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures:	

SECTION 3 - PHOTOGRAPH LOG

Overview of CB showing drainage area	0675 - Looking N 0676 - Looking S
Catch basin plan view prior to sampling showing solids	0677 - Prior to removal of fabric
Lateral connections to/from CB	
Homogenized sample (sediment in bowl)	

Outfall 33 – 2009 COP sampling event

Photo No.

ANY616 – 0677 – With filet fabric in place

Photo No.

ANY616 – Overlying water in CB

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
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Portland, OR 97203-5452

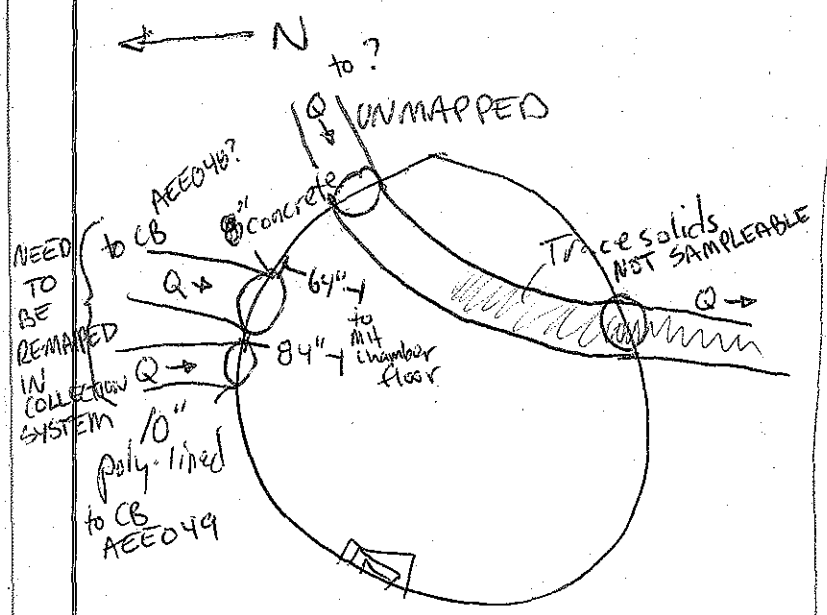
INLINE SEDIMENT SAMPLING FIELD DATA SHEET

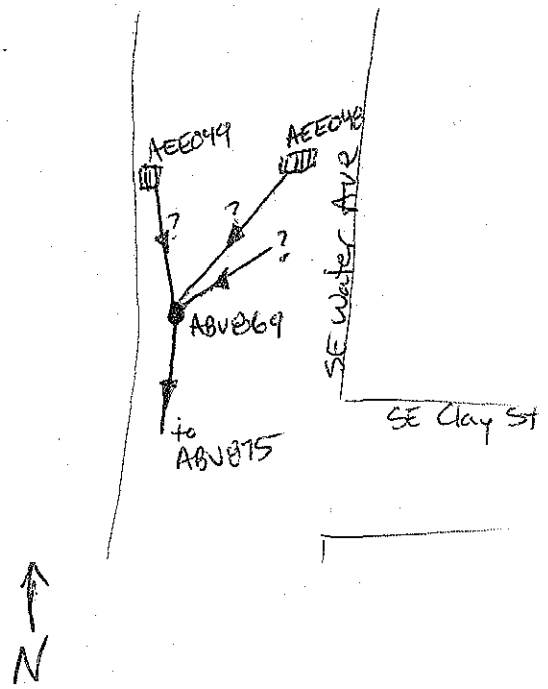
Project Name: Portland Harbor Inline Sed Samp			Project Number: 1020.001
Sampling Team: PTB, JKB	Date: 8/5/09	Arrival Time: 1000	Current Weather Conditions/Last Rain: Overcast, warm/ ~1 mo. ago
Basin: 33	Node: ABV869		Subbasin: NA
Sampling Location Description/Address: 1515 SE Water Avenue			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	Main invert was wetted but no flowing or standing water observed.
Does river appear to back up to this location? Describe rate/color/odor of flow:	The river does not appear to back up to this location.
Are sediments observed in the line?	Yes, < 0.1" trace solids from center of invert extending downstream out of MH.
Are sample-able quantities of sediments present in the line?	No, solids are sparse and are somewhat cemented rendering them incapable of removal.
Describe lateral extent of sample-able sediments present in the line:	NA

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.





Collection system has CBs improperly connecting to ABV869 as well as lacking pipe sizes. The main inlet to the MH chamber is unmapped

PTB 8/12/09

Date: 8/5/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ABU869

Sampling Equipment:		□Stainless steel spoon & stainless steel bucket □ Other (Describe)
Equipment Decontamination process:		□ Per SOP7.01a □ Other (Describe)
Sample date:	Sample time:	Sample Identification: (IL-XX-NNNNNN-mmyy)
Sample location description: (number of feet from node of entry) NO SAMPLE WAS COLLECTED.		
Sample collection technique:		
Describe Color of sample:		
Describe Texture/Particle size:		
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):		
Describe depth of solids in area where sample collected:		
Describe amount and type of debris in sample:		
Amount and type of debris removed from final sample:		
Compositing notes:		

Sample Jars Collected (number, size, full or partial)?				
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				
Lab ID	Duplicate sample collected? Y/N		Dupe ID	
Duplicate sample identification # on COC:				
Any deviations from standard procedures:				

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	0679 looking N 0680 looking S
Plan view of sediments inline	
Homogenized sample (sediment in bowl)	
Other?	0681 vs main

Photo No.

ABU869 – 0679 – Main inlet

Photo No.

ABU869 – 0680 – Main outlet

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
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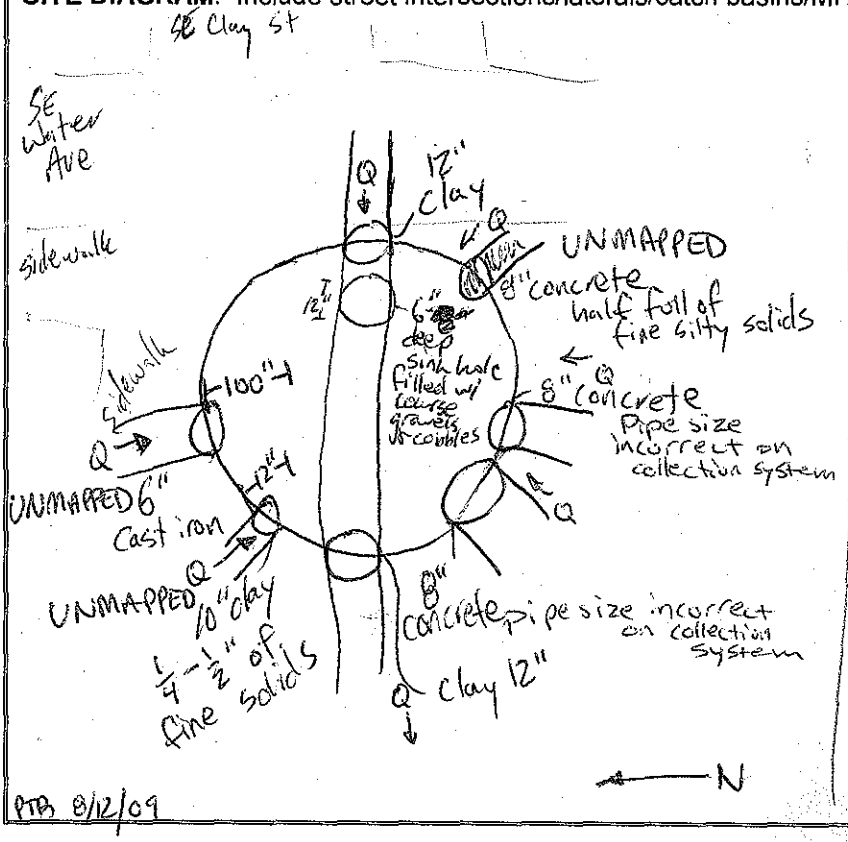
INLINE SEDIMENT SAMPLING FIELD DATA SHEET

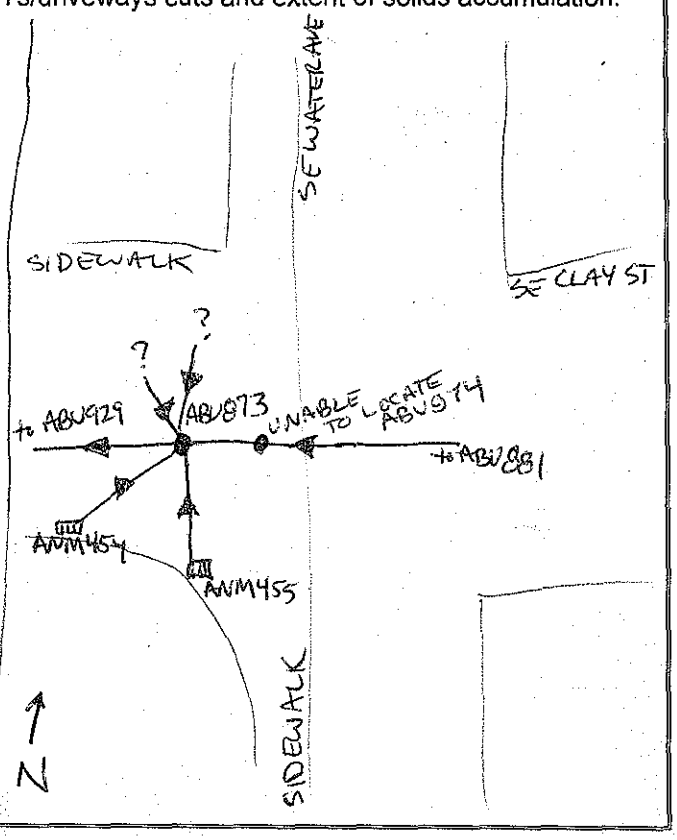
Project Name: Portland Harbor Inline Sed Samp			Project Number: 1020.001
Sampling Team: PTB, JXB	Date: 8/5/09	Arrival Time: 1027	Current Weather Conditions/Last Rain: Overcast, warm/~1 month ago
Basin: 33	Node: ABU873		Subbasin: NA
Sampling Location Description/Address: SE Clay + Water Avenue			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	<0.1" base flow with ponding water in floor of MH invert. Pond of water is ~6" deep.
Does river appear to back up to this location? Describe rate/color/odor of flow:	No, river does not appear to back up to this location.
Are sediments observed in the line?	Yes, sediments are observed in main invert but they consist of coarse gravels and cobbles.
Are sample-able quantities of sediments present in the line?	No, sediments are too coarse for normal sample collection.
Describe lateral extent of sample-able sediments present in the line:	NA

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.





Date: 8/5/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ABU873

Sampling Equipment:	□Stainless steel spoon & stainless steel bucket □ Other (Describe)
Equipment Decontamination process:	□ Per SOP7.01a □ Other (Describe)
Sample date: / Sample time:	Sample Identification: (IL-XX-NNNNNN-mmyy)
Sample location description: (number of feet from node of entry)	NO SAMPLE WAS COLLECTED
Sample collection technique:	
Describe Color of sample:	
Describe Texture/Particle size:	
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	
Describe depth of solids in area where sample collected:	
Describe amount and type of debris in sample:	
Amount and type of debris removed from final sample:	
Compositing notes:	

Sample Jars Collected (number, size, full or partial)?				
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				
Lab ID	Duplicate sample collected? Y/N		Dupe ID	
Duplicate sample identification # on COC:				
Any deviations from standard procedures:				

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	JBS phone: Compressed 0
Plan view of sediments inline	
Homogenized sample (sediment in bowl)	
Other?	0683 - invert 0685 - outlet 0684 - inlet

Photo No.

ABU873 – 0683 – Main inlet

Photo No.

ABU873 – 0685 – Main outlet

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

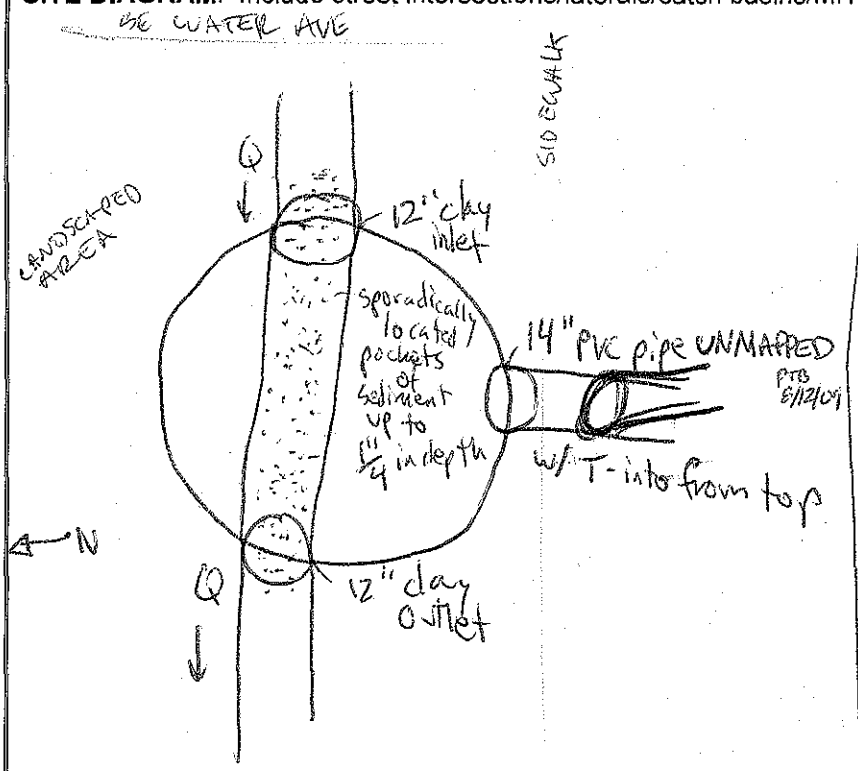
INLINE SEDIMENT SAMPLING FIELD DATA SHEET

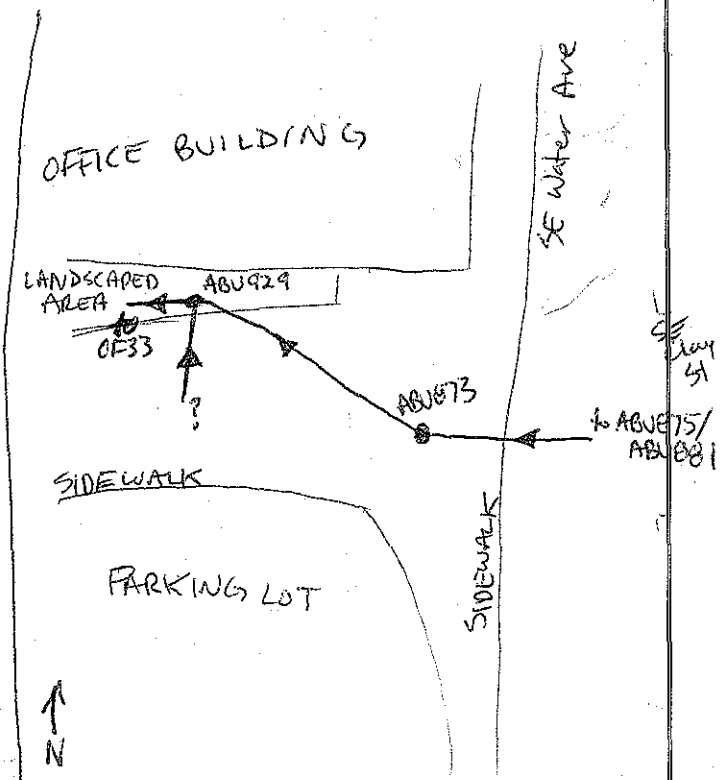
Project Name: Portland Harbor Inline Sed Samp			Project Number: 1020.001
Sampling Team: PTB, JXB	Date: 8/5/09	Arrival Time: 1056	Current Weather Conditions/Last Rain: overcast + warm / ~1 month
Basin: 33	Node: ABU929		Subbasin: NA
Sampling Location Description/Address: WEST OF SE CLAY + WATER AVE			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	~2" of current flow with pooling in the main invert up to 2" in depth.
Does river appear to back up to this location? Describe rate/color/odor of flow:	Yes, no current back-up but solids on walls of MH chamber
Are sediments observed in the line?	Sediments are sporadically found in main invert in pockets up to 0.25"
Are sample-able quantities of sediments present in the line?	Potentially, sampling will be attempted. The sediment is found in small quantities but could be enough.
Describe lateral extent of sample-able sediments present in the line:	Sediments are found in pockets sporadically located up and down the main invert within MH chamber but not up or ds

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.





33-6

Date: 8/5/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ABU929

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a ☐ Other (Describe)
Sample date: 8/5/09 / Sample time: 1120	Sample Identification: (IL-XX-NNNNNN-mmyy) IL-33-ABU929-0809
Sample location description: (number of feet from node of entry) Sporadic pockets of sediment along the main invert between the inlet and the outlet in the MH chamber.	
Sample collection technique:	Using scoop to scrape solids off of invert and allowing overlying water to decant off before being added to the sample bucket.
Describe Color of sample:	Dark greyish brown
Describe Texture/Particle size:	85% fine silts & clays, 10% sands, 5% pebbles + <1% debris
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	No visual or olfactory evidence of contamination.
Describe depth of solids in area where sample collected:	Sample was collected in pockets of sediment up to ½" deep.
Describe amount and type of debris in sample:	<1% debris in sample incl. small woody debris, fish/frog eggs
Amount and type of debris removed from final sample:	No debris was removed.
Compositing notes: Sample was homogenized in sample collection bucket using a fresh deconned stainless steel spoon. then transferred to the composite jar.	
Sample Jars Collected (number, size, full or partial)?	1 full 4 oz. JAR

If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				
	PCB Aroclors			
	Total Solids			
	TOC			

Lab ID FO Ø95793	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures: None	

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	Jeremiah's phone via e-mail: Compressed 2
Plan view of sediments inline	689-invert
Homogenized sample (sediment in bowl)	Compressed 1
Other?	689-invert, 686-us inlet, 687-dsoutlet

Outfall 33 – 2009 COP sampling event

Photo No.

ABU929 – 686 – Main Inlet

Photo No.

ABU929 – 687 – Main outlet

City of Portland
Environmental Services

DAILY FIELD REPORT

Project: Portland Harbor ~~Stormwater~~ Inline Samp Basin 33
Project No. 1020.001
Location: SE 2nd + Market.
Date: 8-7-09
Subject: Day 3 Sediment Sampling @ CB ANY616
By: JXB, AJA

PTB 8/18/

1040 Arrive on site ~~to~~ at catch basin ANY616 (SE 2nd + Market). Present condition of catch basin contents are the same as observed on 8-5-09 by JXB + PTB. Water is overlaying seds. Water surface has evidence of hydrocarbons, organics and Iron bacteria
Field crew will attempt a Stainless steel split auger (deconned w/ Acetone + MeHanol) sample to acquire seds.

Access to downstream manhole (to observe presence of solids in line) ~~inacc~~ unavailable due to semi-permanent steel plate in place from recent Maintenence work.

Split Auger technique not working. Sediments not solid enough to stay in auger head during retrieval.

Will attempt sampling w/ deconned ponar sampler.
1058 Ponar successful. Grab taken from center of CB
Full profile sampled.
Sample has strong decomposing organics odor. Associated water has very evident sheen. Photos taken.

Attachments

City of Portland
Environmental Services

DAILY FIELD REPORT

Project Portland Harbor Inline Samp
Project No. 1020.001
Location SE 2ND & Market
Date 8/7/09
Subject Day 3 Inline Samp @ AW4616
By JXB, AJA

PTB 8/12/10

1108 Sample de-watered and homogenized. Evident hydrcarbon sheen present in seds

1115 Subsamples of composite collected 4-4oz jars for analysis plus an additional jar for Archive.

Attachments

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, OR 97203-5452

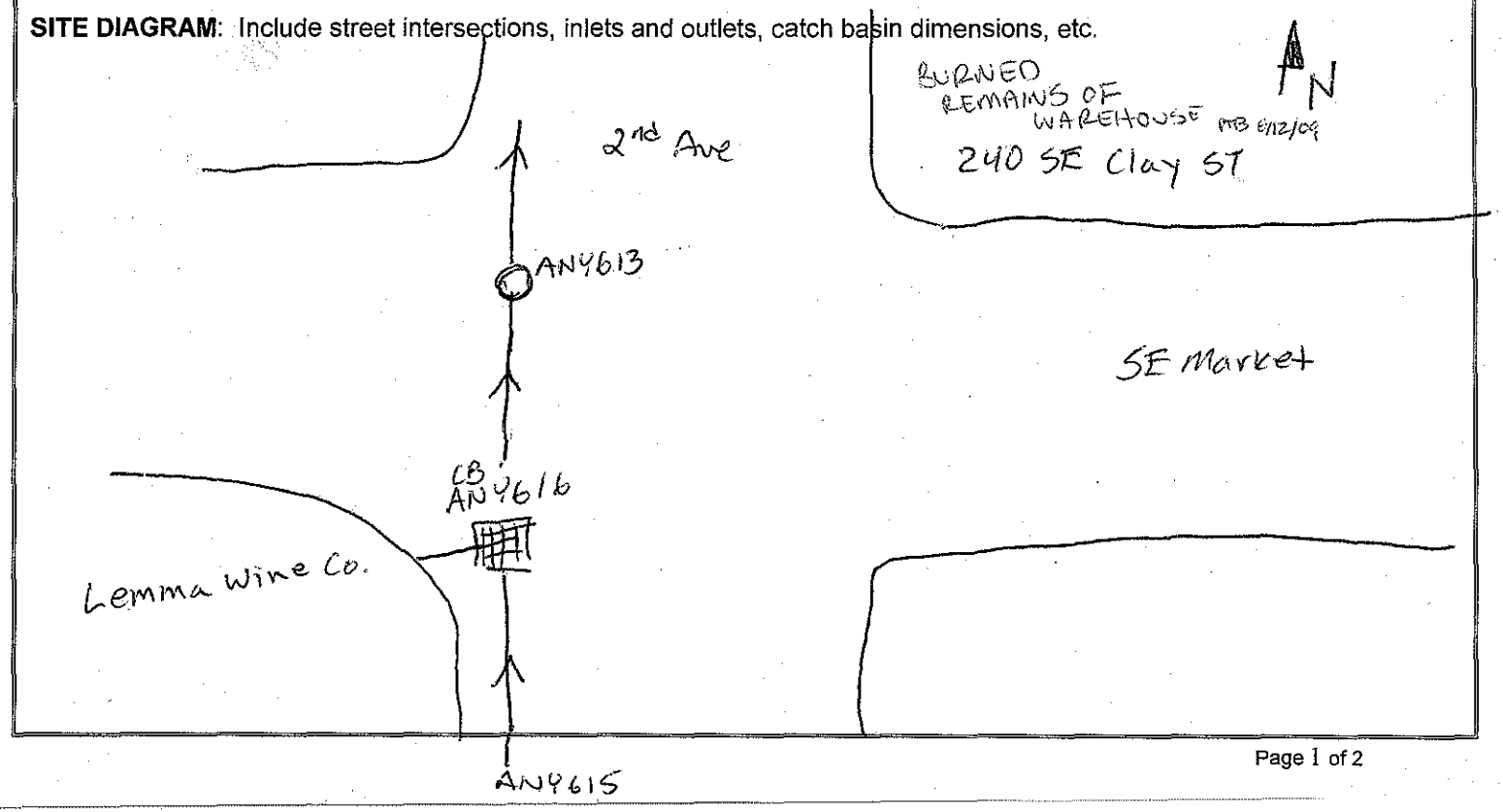
CATCH BASIN SOLIDS SAMPLING FIELD DATA SHEET

Project Name: Portland Harbor Inline Samp		Project Number: 1020.001
Sampling Team: JXB/AJA	Date: 8-7-09	Arrival Time: 1040 PDT
Basin: 33	Node: AN4616	Address: SE 2nd & Market
Current weather and last known rainfall: Overcast mid-70's w/ No measurable precip. within last 24 hours		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe potential solids or contaminant sources that could impact catch basin (const. activities, erosion, vehicles, material storage, onsite processes, etc.):	Large-scale fire @ Electrical supply/distribution warehouse (Taylor Electric) ~ 4 years ago. CB lateral appears to originate from Lemma Wine company warehouse & electrical warehouse/distribution company in drainage area currently.
Describe debris and/or clogging around, or in catch basin grate/cover:	CB was completely clogged w/ filter fabric in place
Is there standing water in catch basin?	Yes
Describe visual or olfactory observations of contamination at catch basin if any (odor, sheen, discoloration, etc.)	Strong decomposing organic odor; hydrocarbon sheen; iron bacteria sheen present; and strong "food" waste odor observed
Describe depth of sediments present in catch basin and the total depth of the catch basin or sump:	See 8-5-09 field notes

SITE DIAGRAM: Include street intersections, inlets and outlets, catch basin dimensions, etc.



Date: 8-7-09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ANY616

Sampling Equipment:	□Stainless steel spoon & stainless steel bucket ☒OTHER (DESCRIBE) Stainless steel Ponar Dredge, bowl & spoons
Equipment decontamination procedure:	☒Per SOP7.01a □ OTHER (DESCRIBE)
Sample date: 8-7-09	Sample time: 1108
Sample Identification Code: IL-33-ANY616-0809	Sample collection technique and if/how overlying water was removed: Sampled solids once using a stainless ponar dredge in the center of the CB along the entire vertical horizon. Overlying supernate was decanted from the bowl after allowing solids to settle out of suspension (~5 minutes).
Subsample number and location:	One solids sample through entire horizon @ the center of the CB using a stainless ponar dredge
Color of sample:	Black
Texture/particle size:	Fine silts w/ minor sands, organics & non-organics (metal, glass & plastics)
Visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.)	Strong decomposing odor, hydrocarbon odor, iron bacteria sheen & "food" waste odor present
Amount and type of debris in bulk sample:	~94% fine silts; ~1% coarse sands; ~3% leaf litter; <2% non-organics (metal, glass, plastics)
Amount and type of debris removed from final sample:	<1% of bulk sample removed. Primarily large organic leaf litter, metal nuts & washers, glass & plastics
Compositing notes:	Bulk solids sample was thoroughly homogenized in a stainless deconed bowl w/a deconed stainless mixing spoon
Sample jars collected (number, size, full or partial)?	(4) 4oz full sample jars + (1) 4oz archived sample jars

If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				
	PCB-Aroclors LL			
	TOC			
	Percent Solids			
	Total Metals			
	PAH + Phthalates			

Lab ID: FO095794	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures:	NO

SECTION 3 - PHOTOGRAPH LOG

Overview of CB showing drainage area	See 8-5-09 site recon notes.
Catch basin plan view prior to sampling showing solids	0917 ~~0477~~ JXB.jpg
Lateral connections to/from CB	lateral connection is clogged &
Homogenized dewatered sample (sediment in bowl)	0920.jpg

Composite bulk sample not-dewatered 0918.jpg & Close up 0919.jpg

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
(503) 823-5696

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 8/5/09
Page: 1 of 1
Collected By: PTB, JXB, MJS, ECH, LAP

Project Name: PORTLAND HARBOR INLINE SAMP
File Number: 1020.001 Matrix: SEDIMENT

OUTFALL 33

Requested Analyses

WPCL Sample I.D.	Location	Point Code	Sample Date	Sample Time	Sample Type	Organics: PCB Aroclors - LL	Organics: PAH+Phthalates by TA	Organics	Organics	Organics	Organics	General: Total Solids	General: TOC	General	Metals: Total Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn)	Field Comments
FO095788	IL-33-ABU888-0809 240 SE CLAY ST	33_1	8/4/09	0954	C	●	●					●	●		●	One jar 2/3 full
FO095789	IL-33-AEE077-0809 SE MARKET & 2ND	33_2	8/4/09	1026	C	●	●					●	●		●	Four jars
FO095790	IL-33-ABU883-0809 120 SE CLAY ST	33_3	8/4/09	1149	C	●						●	●			Four jars - Hold extra sample jars for possible PAH+Phthalates and metals
FO095791	IL-33-ABU881-0809 SE CLAY & WATER	33_4	8/4/09	1307	C	●						●	●			Two Jars
FO095792	IL-33-ABU941-0809 SE WATER & CLAY	33_5	8/4/09	1348	C	●						●	●			Four jars - Hold extra sample jars for possible PAH+Phthalates and metals
FO095793	IL-33-ABU929-0809 W OF CLAY & WATER	33_6	8/5/09	1120	C	●						●	●			One full jar

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.	Relinquished By: 4.
Signature: Peter Bryant Time: 1536	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Peter Bryant Date: 8/5/09	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Received By: 1.	**Received By: 2.**	**Received By: 3.**	**Received By: 4.**
Signature: Time:	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Date:	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:

Water Pollution Control Laboratory
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Portland, Oregon 97203-4552
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City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 8/7/09
Page: 1 of 1
Collected By: JXB/AJA

Project Name: PORTLAND HARBOR INLINE SAMP
File Number: 1020.001 Matrix: SEDIMENT

OUTFALL 33

Requested Analyses

WPCL Sample I.D.	Location	Point Code	Sample Date	Sample Time	Sample Type	Organics: PCB Aroclors - LL	Organics: PAH+Phthalates by TA	Organics	Organics	Organics	Organics	General: Total Solids	General: TOC	General	Metals: Total Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn)	Field Comments
FO095794	IL-33-ANY616-0809 SE 2ND & MARKET	33_7	8/7/09	1108	C	●	●					●	●		●	

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.	Relinquished By: 4.
Signature: Time: 1243	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Jeremiah Bawden Date: 8-7-09	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Received By: 1.	**Received By: 2.**	**Received By: 3.**	**Received By: 4.**
Signature: Time:	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Date:	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:

City of Portland
Environmental Services

DAILY FIELD REPORT

Project Portland Harbor Inline Samp
Location M1 & Basin 33
Subject Re-samples and additional investigations

Project No. 1020.001
Date 11/10/09
By PTB, JXB, ECH

0921 Arrive on-site M1 to sample upstream of MH chamber. Previous sampling in this MH occured downstream of the MH chamber. Per customer request photos were taken of the manhole lid and its holes (Photos 1329 – 1332). Recent rain occurred yesterday and last night. The pavement today is wetted with areas of standing water but skies are clear and blue.

0957 Collected sample us of MH chamber at ~ 25 ft. from EOP.

1047 Arrive on-site at ABU093 in Basin 33. Weather is bright sunny w/ blue skies. Heavy rains last night and yesterday. Initial observations top-side indicate a dry-weather WQ sample will be unlikely.

1119 Sample collected from main inlet into MH. No water to sample for WQ. This inlet is from a CB sampled during previous activities in this basin. Will communicate with customer (Rod Struck) before relinquishing sample in case of redundancy.

1137 Arrive at AEE063. Investigate solids extent in CB. Only in lowest part of CB, but still sample-able.

1149 Collected sample. Gave sample point code 33-8.

1208 Spoke w/ Rod regarding submission of sample from ABU093. He would still like the sample submitted. The dry weather WQ sample will not be collected as there is no active flow. He understood that there was flow observed at one time and if there was while we were here that we should collect it. Sample from ABU093 given point code 33-9.

1224 – Arrive at AEE059. Investigate solids extent in CB. CB is completely full of solids (~ 80-85% full).

Attachments

JXB

City of Portland
Environmental Services

DAILY FIELD REPORT

Project Portland Harbor Inline Samp.
Project No. 1020.001
Location Basin 33
Date 11/10/09
Subject Inline Sed. Samp Investigation
By PTB/JXB/ECH

1229 - Sampled CB AEE059. Removed solids from CB AEE059 from three subsample pits that were evenly distributed anlong the center of the CBs lateral extent. Gave composite sample sample point code 33_10 (IL-33-AEE059-1109).

1259 Arrive ABU882. Investigate solids extent. Sample-able solids only in the 16" lateral to E.
1320 Collected sample and gave it point code 33_11.

1350 Arrive AEE055 to investigate extent of solids. Top view without removing gate suggests heavy leaf deposition
1400 Performed Field Decon Blank using ultra pure DI water from the Milli-Q station in the lab at the WPCL. The blank will be performed on a stainless steel bowl & spoon used for collection at the next site. Analytes for the blank are PAH + Phthalates and total metals.
1416 Sample at AEE055 collected and given point code 33-12

1434 Returned to WPCL to relinquish samples.

FIELD DECON BLANK: FO096171

Attachments

33-0

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

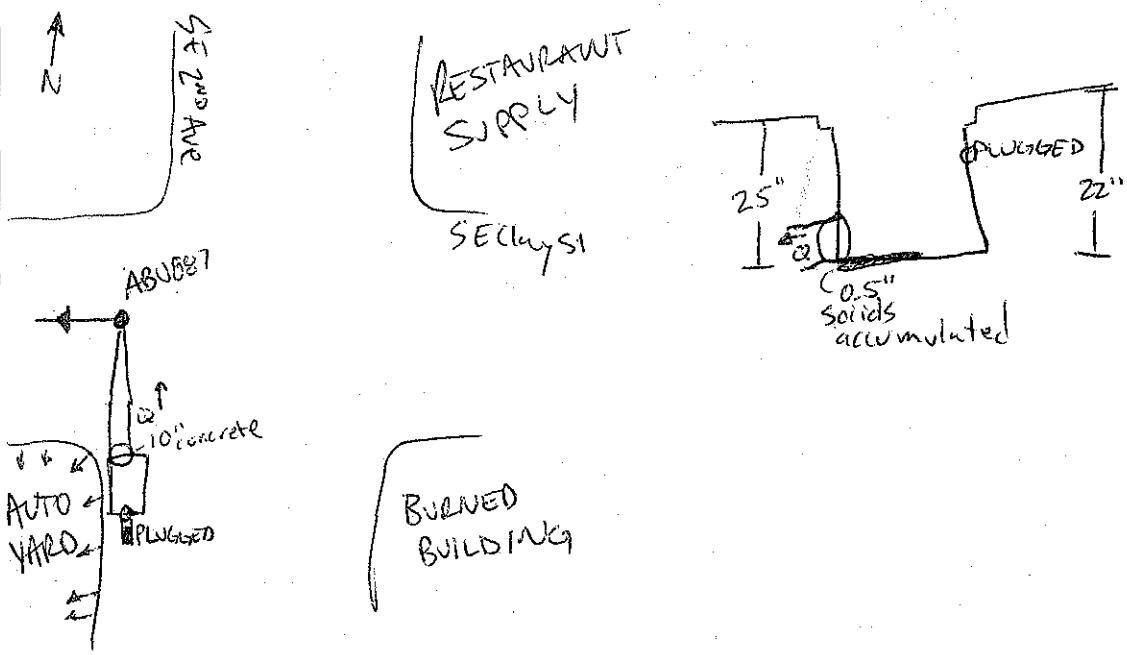
CATCH BASIN SOLIDS SAMPLING FIELD DATA SHEET

Project Name: Portland Harbor Inline Samp		Project Number: 1020.001
Sampling Team: PTB, ECH, JXB	Date: 11/10/09	Arrival Time: 1137
Basin: 33	Node: AEE063	Address: SE 2ND + SE CLAY
Current weather and last known rainfall: Sunny. Last rain was last night.		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe potential solids or contaminant sources that could impact catch basin (const. activities, erosion, vehicles, material storage, onsite processes, etc.):	Burned out building to E across street. Directly south is a line of parked cars. SE Clay is a relatively high traffic street. TO SW is an auto yard (which is downslope)
Describe debris and/or clogging around, or in catch basin grate/cover:	CB grate cover is completely free of clogging + debris
Is there standing water in catch basin?	No standing water.
Describe visual or olfactory observations of contamination at catch basin if any (odor, sheen, discoloration, etc.)	No visual or olfactory observations of contaminants.
Describe depth of sediments present in catch basin and the total depth of the catch basin or sump:	Sediments are accumulated to a depth of 0.5". The CB is 25" at its deepest at the outlet.

SITE DIAGRAM: Include street intersections, inlets and outlets, catch basin dimensions, etc.



33-8

Date: 11/10/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: AEE063

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ OTHER (DESCRIBE)
Equipment decontamination procedure:	☒ Per SOP7.01a ☐ OTHER (DESCRIBE)
Sample date: 11/10/09	Sample time: 1149
Sample Identification Code: IL-33-AEE063-1109	Sample collection technique and if/how overlying water was removed: Used spoon to scrape seds off bottom of CB.
Subsample number and location:	No subsamples. All material was removed.
Color of sample:	Very dark brown, almost black
Texture/particle size:	87% sands, 3% fine silts, 10% debris (7% organics, 3% other change, plastics, etc)
Visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.)	No visual or olfactory evidence of contamination.
Amount and type of debris in bulk sample:	10% debris in sample (7% organics, 3% other incl. change, plastics, etc.)
Amount and type of debris removed from final sample:	All debris was excluded from final sample.
Compositing notes:	Homogenized using stainless steel collection spoon. Sample jars filled with a new deconned spoon.
Sample jars collected (number, size, full or partial)?	
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).	
Lab ID FO096166	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures:	None

SECTION 3 - PHOTOGRAPH LOG

Overview of CB showing drainage area	
Catch basin plan view prior to sampling showing solids	1350 w/grate
Lateral connections to/from CB	1351
Homogenized sample (sediment in bowl)	1353 + 1354

Photo No.

AEE063 – Lateral connections from CB

33-9

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ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

INLINE SEDIMENT SAMPLING FIELD DATA SHEET

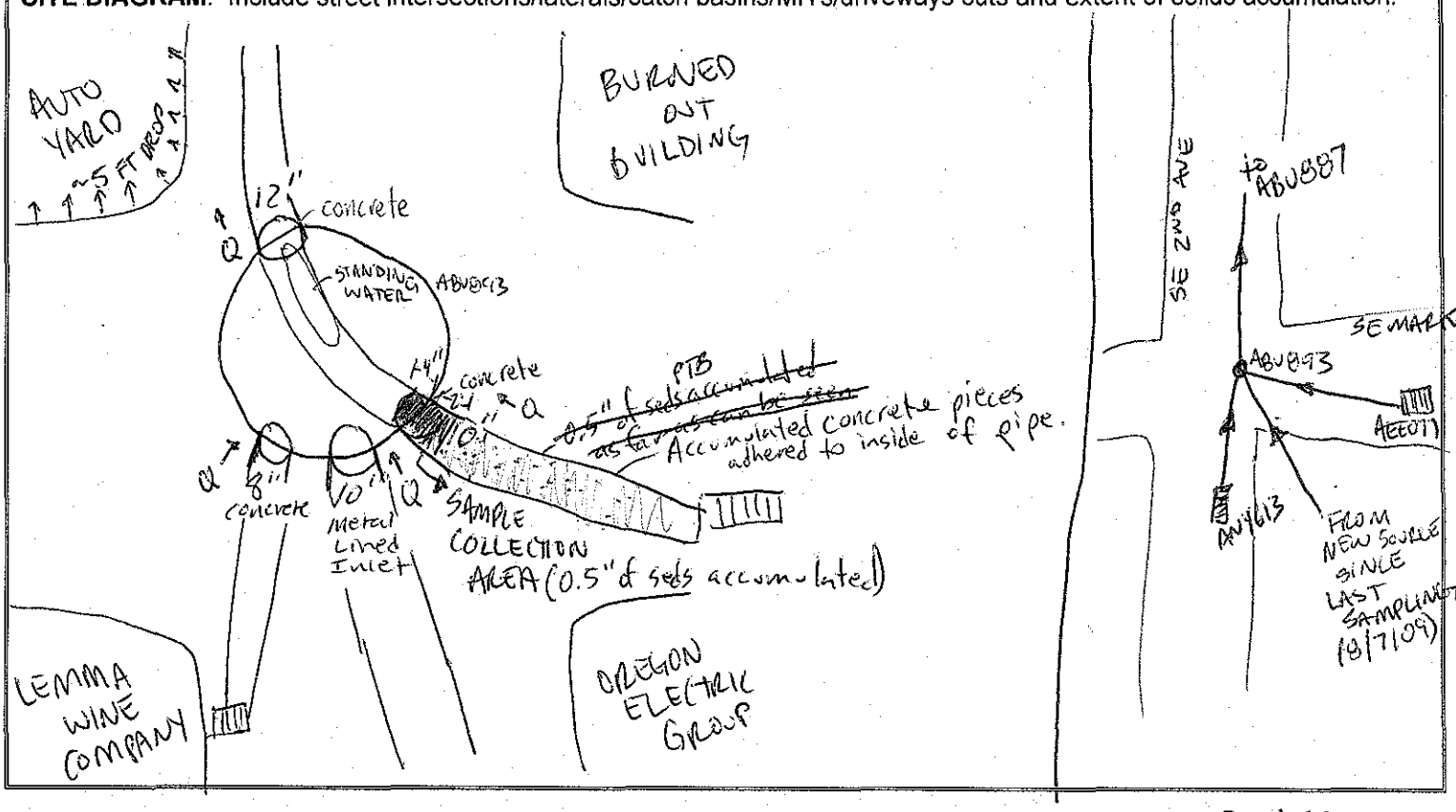
Project Name: Portland Harbor Inline Samp			Project Number: 1020.001
Sampling Team: PTB, JXB, ECH	Date: 11/10/09	Arrival Time: 1047	Current Weather Conditions/Last Rain: Sunny / last night
Basin: 33	Node: ABU893		Subbasin: NA

Sampling Location Description/Address: 120 SE Market St.
MH is located in intersection w/ burned out building to NE, Auto yard located downslope to NW, Lemma wine company to SW and Oregon Electric Group to SE.

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	No flowing water. Some standing water, ~3 ft. in length and ~0.5 in. deep. in MH chamber.
Does river appear to back up to this location? Describe rate/color/odor of flow:	No, river does not appear to back up to this location.
Are sediments observed in the line?	Yes, sediments are present in the inlet to the SE.
Are sample-able quantities of sediments present in the line?	Yes, sediments are ~0.5 in. in depth on average.
Describe lateral extent of sample-able sediments present in the line:	Sediments extend as far as can be seen upstream in this lateral.

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.



33-9

Date: 11/10/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ABU893

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a ☐ Other (Describe)
Sample date: 11/10/09 Sample time: 1119	Sample Identification: (IL-XX-NNNNNN-mmyy) IL-33-ABU893-1109
Sample location description: (number of feet from node of entry)	4in. into MH chamber from EOP US to ~ 2ft. from MH chamber
Sample collection technique:	All sediments accumulated within sample location area were collected.
Describe Color of sample:	Very dark grey/Black
Describe Texture/Particle size:	95% sands & silts, 5% angular material, <1% debris (metal/organics)
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	No visual evidence of contamination. Apparent metallic odor.
Describe depth of solids in area where sample collected:	Seds were 0.5" deep in sample collection area.
Describe amount and type of debris in sample:	<1% debris (metal & organics)
Amount and type of debris removed from final sample:	None
Compositing notes:	Homogenized using sample collection spoon and sample jars filled w/ fresh deconned spoon.
Sample Jars Collected (number, size, full or partial)?	4 full 4oz. jars
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).	
Lab ID FO096167	Duplicate sample collected? Y/N Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures:	None

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	1346 & 1347 & 1348
Plan view of sediments inline	1342 main inlet 1344 main outlet 1343 lateral
Homogenized sample (sediment in bowl)	1345
Other?	

Photo No.

ABU893 – 1342 – Main inlet

Photo No.

ABU893 – 1344 – Main outlet

Photo No.

ABU893 – 1343 – ABU893 Laterals from south

33_10

CITY OF PORTLAND
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Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

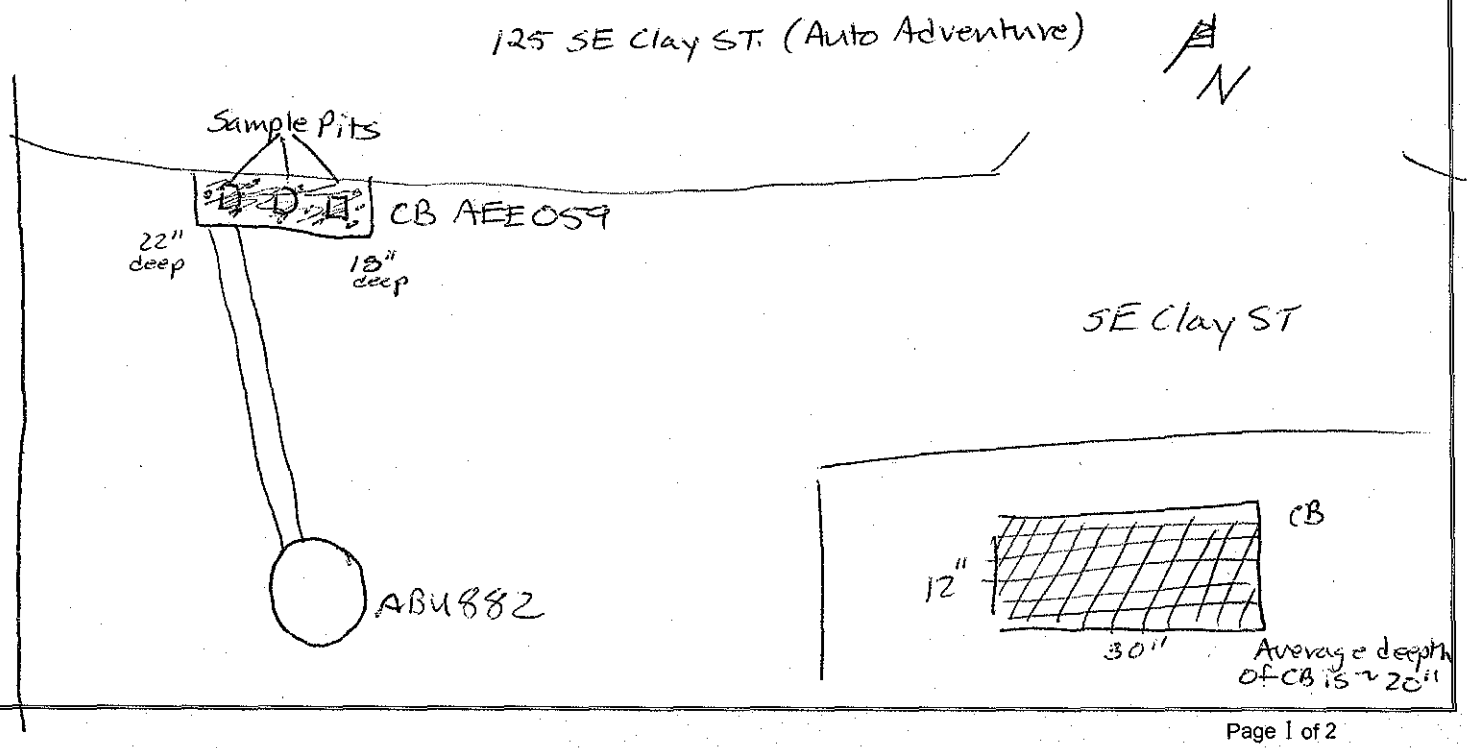
CATCH BASIN SOLIDS SAMPLING FIELD DATA SHEET

Project Name: Portland Harbor Inline Samp.		Project Number: 1020.001
Sampling Team: JXB/PTB/ECH	Date: 11/10/09	Arrival Time: 1224
Basin: 33	Node: AEE059	Address: 125 SE Clay ST.
Current weather and last known rainfall: Sunny & cool / rainfall within the last 24 hours		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe potential solids or contaminant sources that could impact catch basin (const. activities, erosion, vehicles, material storage, onsite processes, etc.):	Parked vehicles on SE Clay along catchment Rail road tracks downstream of site & PGE staging facility. Heavy traffic along SE Clay (Ross Island cement truck route & several industries).
Describe debris and/or clogging around, or in catch basin grate/cover:	Vegetated matter in CB grate
Is there standing water in catch basin?	No
Describe visual or olfactory observations of contamination at catch basin if any (odor, sheen, discoloration, etc.)	None
Describe depth of sediments present in catch basin and the total depth of the catch basin or sump:	Approx. 14" total depth of solids throughout CB

SITE DIAGRAM: Include street intersections, inlets and outlets, catch basin dimensions, etc.



33-10

Date: 11/10/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ~~AA~~ AEE059

Sampling Equipment:	□Stainless steel spoon & stainless steel bucket (JXB) X OTHER (DESCRIBE) Stainless steel bowl & square trovel
Equipment decontamination procedure:	X Per SOP7.01a □ OTHER (DESCRIBE)
Sample date: 11/10/09	Sample time: 1229
Sample Identification Code: IL-33-AEE059-1109	Sample collection technique and if/how overlying water was removed: Removed solids from three evenly distributed subsample pits along the center of the CBs lateral length to an average deepth of approx. 10".
Subsample number and location:	Three subsample pits were distributed evenly along the lateral length of the CB (Average depth of ~10")
Color of sample:	Dark gray
Texture/particle size:	Upstream subsample pit material was primarily silty sand & downstream most subsample pit material was primarily sandy silt.
Visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.)	None
Amount and type of debris in bulk sample:	~95% sands & silt; ~4% organics; <1% trash (plastics primarily)
Amount and type of debris removed from final sample:	<4% of bulk material removed from composite (mainly organics & plastics)
Compositing notes:	Thoroughly mixed subsample material; removing <4% of bulk sample (JXB) (~~trash & organics~~) (trash & organics)
Sample jars collected (number, size, full or partial)?	4x 4oz full sample jars
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).	See work order analyte list
Lab ID FO096168	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures:	No

SECTION 3 - PHOTOGRAPH LOG

Overview of CB showing drainage area	~~1358.jpg~~ 1359.jpg 1360.jpg
Catch basin plan view prior to sampling showing solids	1361.jpg
Lateral connections to/from CB	none
Homogenized sample (sediment in bowl)	1362.jpg

CB prior to removing CB grate 1357.jpg

Photo No.

AEE059 – 1361 – Plan view of sediments post sampling

33-11

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

INLINE SEDIMENT SAMPLING FIELD DATA SHEET

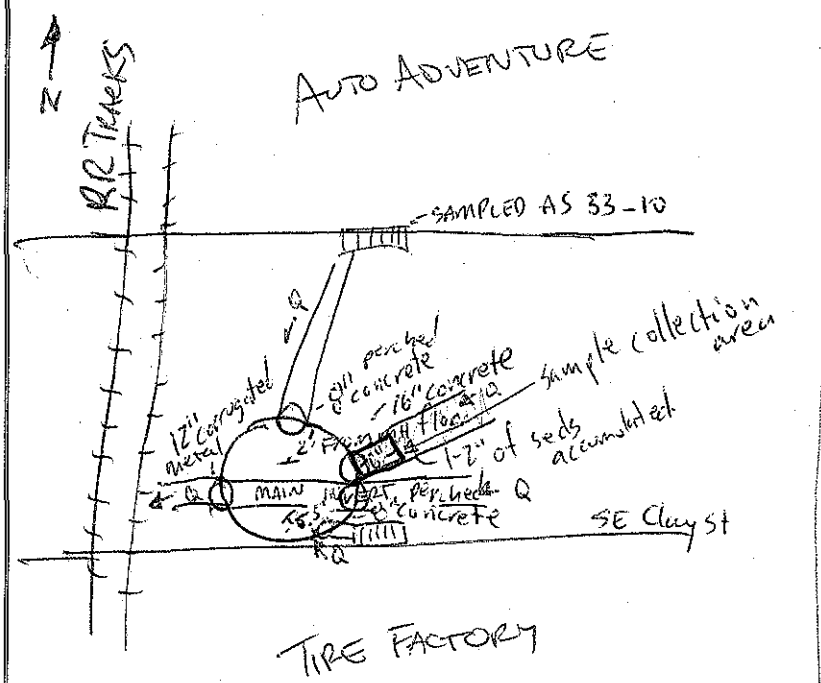
Project Name: Portland Harbor Inline Samp			Project Number: 1020.001
Sampling Team: PTB, ECH, JXB	Date: 11/10/09	Arrival Time: 1300	Current Weather Conditions/Last Rain: Sunny / last rain was last night
Basin: 33	Node: ABU882		Subbasin: NA

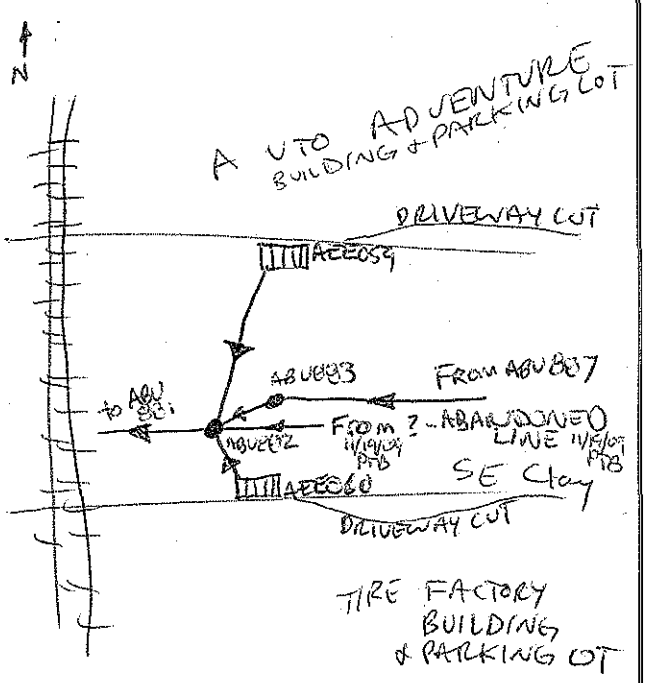
Sampling Location Description/Address: 120 SE Clay Near UPRR Tracks. MH is located in East bound lane of SE Clay. UPRR tracks are 25 ft. to the west. Auto parts ~~parts~~ PTB store to N and auto repair/tire store to south.

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	Flowing water is present at 4.5" in depth with oily sheen and suds on water's surface
Does river appear to back up to this location? Describe rate/color/odor of flow:	No, river does not appear to back up.
Are sediments observed in the line?	Yes, only in the 16" concrete inlet. Not in the main invert.
Are sample-able quantities of sediments present in the line?	Yes, coarse angular gravels mixed with sands & silts
Describe lateral extent of sample-able sediments present in the line:	Sediments extend up 16" lateral to next MH ranging in depth from 1-2"

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.





MAIN INLET FROM EAST ~~IS NOT CURRENTLY MAPPED IN THE GIS LAYER~~ IS AN ABANDONED LINE 11/10/09 PTB 11/11/09 PTB

33-11

Date: 11/10/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ABU

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a ☐ Other (Describe)
Sample date: 11/10/09 / Sample time: 1320	Sample Identification: (IL-XX-NNNNNN-mmyy) IL-33-ABU082-1109
Sample location description: (number of feet from node of entry)	6" US from EOP in MH chamber taking a cross section of the entire profile.
Sample collection technique:	Using a stainless steel scoop to scrape solids from the pipe floor, decanting any overlying water.
Describe Color of sample:	Very dark grey
Describe Texture/Particle size:	60% large coarse angular gravels 35% silts & sands, 5% debris (leaves, trash, etc)
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	Hydrocarbon sheen on surface of water as well as strong hydrocarbon odor.
Describe depth of solids in area where sample collected:	Solids were 1-2" in depth in the sample location area.
Describe amount and type of debris in sample:	Large cobbles (5%) & gravels, leaves & trash (5%)
Amount and type of debris removed from final sample:	5% of debris was excluded (incl. cobbles, leaves & trash)
Compositing notes:	Homogenized using sample collection spoon. Jars filled with fresh decon'ed spoon
Sample Jars Collected (number, size, full or partial)?	4 full 4 oz. jars

If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				

Lab ID FO096169	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures: None	

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	1363, 1364 & 1365
Plan view of sediments inline	1367 & 1368
Homogenized sample (sediment in bowl)	1373
Other?	lateral AEE059, 16" 1366, 1367 & 69, inlet, lateral, outlet (x2) photos

Photo No.

ABU882 – Main inlet

Photo No.

ABU882 – Main outlet

Photo No.

ABU882 – 1366 – Lateral inlet from AEE059

Photo No.

ABU882 – 1367 – Lateral inlet from AEE060

Photo No.

ABU882 – 16 inch inlet from ABU883

Photo No.

ABU882 – Plan view of sediments inline prior to sampling

33_12

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

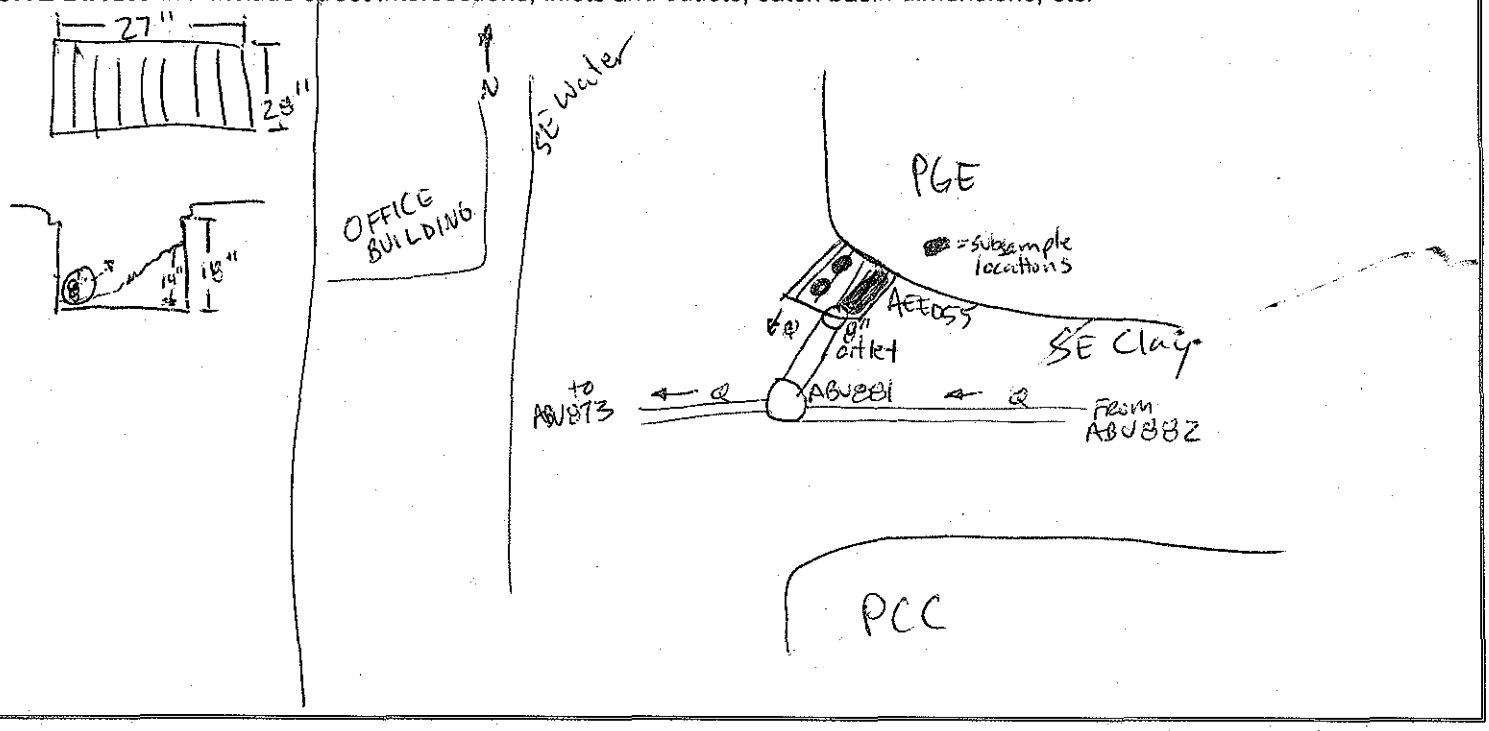
CATCH BASIN SOLIDS SAMPLING FIELD DATA SHEET

Project Name: Portland Harbor Inline Samp		Project Number: 1020.001
Sampling Team: PTB, ECH, JXB	Date: 11/10/09	Arrival Time: 1350
Basin: 33	Node: A EE055	Address: NE corner of SE water & Clay
Current weather and last known rainfall: Cloudy & windy. Last rain was last night.		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe potential solids or contaminant sources that could impact catch basin (const. activities, erosion, vehicles, material storage, onsite processes, etc.):	This CB is at the corner of a major intersection. RR tracks are located to the E one block. PGE has a facility & storage yard located to the NE.
Describe debris and/or clogging around, or in catch basin grate/cover:	Leaf debris occluded 25% of the CB grate with a few angular gravels lodged between.
Is there standing water in catch basin?	No, standing water is not present.
Describe visual or olfactory observations of contamination at catch basin if any (odor, sheen, discoloration, etc.)	No visual or olfactory evidence of contamination.
Describe depth of sediments present in catch basin and the total depth of the catch basin or sump:	Seds are 14" at their deepest point w/in the 18" deep CB. They slope down to the floor in front of the outlet.

SITE DIAGRAM: Include street intersections, inlets and outlets, catch basin dimensions, etc.



Date: 11/10/09	SECTION 2 - SAMPLE COLLECTION REPORT	Node: AEE055

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ OTHER (DESCRIBE)
Equipment decontamination procedure:	☒ Per SOP7.01a ☐ OTHER (DESCRIBE)
Sample date: 11/10/09	Sample time: 1416
Sample Identification Code: 1B-AEE055-1109	Sample collection technique and if/how overlying water was removed: Using a stainless steel spoon to remove seds from three locations within the CB.
Subsample number and location:	3 subsamples. floor in front of outlet, 2 points within the deepest part.
Color of sample:	Dark grey with rust or iron inclusions.
Texture/particle size:	90% loam, 2% angular gravels, 8% debris (leaves, trash)
Visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.)	No visual or olfactory evidence of contamination
Amount and type of debris in bulk sample:	8% debris incl. trash + leaves
Amount and type of debris removed from final sample:	7% of bulk sample removed
Compositing notes: Homogenized using sample collection spoon. Filled jars with fresh decontaminated spoon.	
Sample jars collected (number, size, full or partial)? 4 full 4 oz. jars	
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).	
Lab ID FO096170	Duplicate sample collected? Y/(N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures: None	

SECTION 3 - PHOTOGRAPH LOG

Overview of CB showing drainage area	1374, 75 + 76
Catch basin plan view prior to sampling showing solids	1377, 1378, 1379
Lateral connections to/from CB	1380
Homogenized sample (sediment in bowl)	1381

Photo No.

AEE055 – 1378 – Solids prior to sampling and lateral connection from CB

Photo No.

AEE055 – 1379 – Subsample locations

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
(503) 823-5696

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 11/10/2009

Page: 1 of 1

Collected By: PTB, ECH, JXB

Project Name: PORTLAND HARBOR INLINE SAMP

File Number: 1020.001 Matrix: SEDIMENT

OUTFALL 33 - 2nd Inline Sampling Event

Requested Analyses

WPCL Sample I.D.	Location	Point Code	Sample Date	Sample Time	Sample Type	Organics: PCB Aroclors - LL	Organics: PAH+Phthalates by TA	Organics	Organics	Organics	Organics	General: Total Solids	General	General	Metals: Total Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn)	Field Comments
FO096166	IL-33-AEE063-1109 CB IN SW CORNER OF SE 2ND & CLAY	33_8	11/10/09	1149	C	●	●					●			●	
FO096167	IL-33-ABU893-1109 120 SE MARKET ST	33_9	11/10/09	1119	C	●	●					●			●	
FO096168	IL-33-AEE059-1109 125 SE CLAY ST	33_10	11/10/09	1229	C	●	●					●			●	
FO096169	IL-33-ABU882-1109 120 SE CLAY ST	33_11	11/10/09	1320	C	●	●					●			●	
FO096170	IL-33-AEE055-1109 CB ON NE CORNER OF SE WATER & CLAY	33_12	11/10/09	1416	C	●	●					●			●	
FO096171	FIELD DECON BLANK	FDB	11/10/09	1400	G		●								●	

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.	Relinquished By: 4.
Signature: Peter Bryant Time: 1533	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Peter Bryant Date: 11/10/09	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Received By: 1.	**Received By: 2.**	**Received By: 3.**	**Received By: 4.**
Signature: Time: 1533	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Date: 11/10/09	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:

CATCH BASIN DATA REPORTING AND SCREENING TABLE

INSTRUCTIONS FOR USING THIS TEMPLATE:

This worksheet is protected so you cannot add or delete rows; you may only add data. If you did not analyze for a chemical within a group, fill in "NA" for Not Analyzed. If you did not analyze a whole group, leave it blank.

TO ADD DATA, fill in the columns to the right of the screening table. Label each column with the sample location (e.g., CB #1) and date of the sample. Detected compounds should be in bold text and compounds exceeding SLVs should be shaded. Include qualifiers. For undetected compounds, report them as being less than the method detection level (e.g., <0.5).

Units	Screening Value[1]	33_1 MHABU888 FO095788 08/04/09	33_2 MHAEE077 FO095789 08/04/09	33_3 MHABU883 FO095790 08/04/09	33_4 MHABU881 FO095791 08/04/09	33_5 MHABU941 FO095792 08/04/09	33_6 MHABU929 FO095793 08/05/09	33_7 MHANY616 FO095794 08/07/09	33_8 MHAEE063 FO096166 11/10/09	33_9 MHABU893 FO096167 11/10/09	33_10 CBAEE059 FO096168 11/10/09	33_11 MHABU882 FO096169 11/10/09	33_12 MHAEE055 FO096170 11/10/09
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Metals/Inorganics													
Aluminum (pH 6.5 - 9.0)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	64,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	7,000	**4,920**	**3,120**	NA	NA	NA	NA	**4,080**	**4,670**	**4,390**	**1,880**	**2,270**	**7,530**
Arsenic III	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1,000	**880**	**5,440**	NA	NA	NA	NA	**4,350**	**1490**	**3,550**	**600**	**490**	**1,450**
Chromium, total	111,000	**48,800**	**37,100**	NA	NA	NA	NA	**66,000**	**47,200**	**50,700**	**30,700**	**36,600**	**61,800**
Chromium, hexavalent	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	149,000	**110,000**	**776,000**	NA	NA	NA	NA	**327,000**	**182,000**	**165,000**	**86,900**	**64,900**	**189,000**
Lead	17,000	**105,000**	**666,000**	NA	NA	NA	NA	**591,000**	**257,000**	**393,000**	**60,000**	**1,400,000**	**142,000**
Manganese	1,100,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	70	**92**	**336**	NA	NA	NA	NA	**235**	**70**	**275**	**55**	**118**	**214**
Methyl Mercury	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	48,600	**34,400**	**23,600**	NA	NA	NA	NA	**38,100**	**40,400**	**36,900**	**24,500**	**21,500**	**53,900**
Selenium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	5,000	**220**	**250**	NA	NA	NA	NA	**360**	**270**	**320**	<100	**240**	**790**
Zinc	459,000	**472,000**	**2,000,000**	NA	NA	NA	NA	**1,400,000**	**877,000**	**1,170,000**	**408,000**	**266,000**	**792,000**
Perchlorate	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyltins													
Monobutyltin	--												
Dibutyltin	--												
Tributyltin	1,800												
Tetrabutyltin	--												

Units	Screening Value[1]	33_1 MHABU888 FO095788 08/04/09	33_2 MHAEE077 FO095789 08/04/09	33_3 MHABU883 FO095790 08/04/09	33_4 MHABU881 FO095791 08/04/09	33_5 MHABU941 FO095792 08/04/09	33_6 MHABU929 FO095793 08/05/09	33_7 MHANY616 FO095794 08/07/09	33_8 MHAEE063 FO096166 11/10/09	33_9 MHABU893 FO096167 11/10/09	33_10 CBAEE059 FO096168 11/10/09	33_11 MHABU882 FO096169 11/10/09	33_12 MHAEE055 FO096170 11/10/09
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
PCBs Aroclors													
Aroclor 1016	530	<10	<10	<10	<20	<10	<20	<30	<10	<10	<10	<10	<10
Aroclor 1221	--	<20	<20	<20	<40	<20	<40	<60	<20	<20	<20	<20	<20
Aroclor 1232	--	<10	<10	<10	<20	<10	<20	<30	<10	<10	<10	<10	<10
Aroclor 1242	--	<10	<10	<10	<20	<10	<20	<30	<10	<10	<10	<10	<10
Aroclor 1248	1,500	<10	<10	<10	<20	<10	<20	<30	<10	<10	<10	<10	<10
Aroclor 1254	300	**28**	**46**	<10	<20	<10	<20	<30	<10	<10	<10	<10	**54**
Aroclor 1260	200	**26**	**59**	**12**	<20	<10	**58,000**	<30	**33**	<10	<10	<10	<10
Aroclor 1262	--	<10	<10	<10	<20	<10	<20	<30	<10	<10	<10	<10	<10
Aroclor 1268	--	<10	<10	<10	<20	<10	<20	<30	<10	<10	<10	<10	<10
Total PCBs	0.39	**54**	**105**	**12**	ND	ND	**58,000**	ND	**33**	ND	ND	ND	**54**
PCB Congeners		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
All 209 PCB congener target analytes		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3',4,4'-TCB	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,4,4',5-TCB	0.017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4'-PeCB	0.017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,4',5-PeCB	0.017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3',4,4',5-PeCB	0.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2',3,4,4',5-PeCB	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3',4,4',5-PeCB	0.00005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',5'-HxCB	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',5-HxCB	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3',4,4',5,5'-HxCB	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3',4,4',5,5'-HxCB	0.00021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',5,5'-HpCB	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorinated Herbicides													
Dalapon	--												
Dicamba	--												
MCPA	--												
Dichlorprop	--												
2,4-D	--												
2,4,5-TP (Silvex)	--												
2,4,5-T	--												
2,4-DB	--												
Dinoseb	--												
MCPP	--												

Units	Screening Value[1]	33_1 MHABU888 FO095788 08/04/09	33_2 MHAEE077 FO095789 08/04/09	33_3 MHABU883 FO095790 08/04/09	33_4 MHABU881 FO095791 08/04/09	33_5 MHABU941 FO095792 08/04/09	33_6 MHABU929 FO095793 08/05/09	33_7 MHANY616 FO095794 08/07/09	33_8 MHAEE063 FO096166 11/10/09	33_9 MHABU893 FO096167 11/10/09	33_10 CBAEE059 FO096168 11/10/09	33_11 MHABU882 FO096169 11/10/09	33_12 MHAEE055 FO096170 11/10/09
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Organochlorine Pesticides													
α - BHC	--												
β - BHC	--												
γ - BHC (Lindane)	4.99												
δ - BHC	--												
Heptachlor	10												
Heptachlor epoxide	16												
Aldrin	40												
Chlordane	0.37												
Endosulfan alpha-	--												
Endosulfan beta-	--												
Endosulfan sulfate	--												
DDE	0.33												
DDD	0.33												
DDT	0.33												
DDT - total (sum DDE+DDE+DDT)	0.33												
Dieldrin	0.0081												
Endrin	207												
Endrin aldehyde	--												
Endrin ketone	--												
Methoxychlor	--												
Toxaphene	--												
oxy chlordane	--												
cis - nonachlor	--												
trans - nonachlor	--												
Volatile Organic Compounds													
1,1,1,2- Tetrachloroethane	--												
1,1,1- Trichloroethane (TCA)	--												
1,1,2,2- Tetrachloroethane	--												
1,1,2- Trichloroethane	--												
1,1- Dichloroethane	--												
1,2,3- Trichloropropane	--												
1,2- Dichloroethane (EDC)	--												
cis-1,2-Dichloroethlyene	--												
1,2- Dichloropropane	--												
1,2- Dibromoethane (EDB)	--												
2- Butanone (MEK)	--												
2- Chloroethyl Vinyl Ether	--												
2- Hexanone	--												
4- Methyl-2-Pentanone (MIBK)	--												
Acetone	--												
Acrolein	--												
Acrylonitrile	--												
Bromochloromethane	--												
Bromodichloromethane	--												

Units	Screening Value[1]	33_1 MHABU888 FO095788 08/04/09	33_2 MHAEE077 FO095789 08/04/09	33_3 MHABU883 FO095790 08/04/09	33_4 MHABU881 FO095791 08/04/09	33_5 MHABU941 FO095792 08/04/09	33_6 MHABU929 FO095793 08/05/09	33_7 MHANY616 FO095794 08/07/09	33_8 MHAEE063 FO096166 11/10/09	33_9 MHABU893 FO096167 11/10/09	33_10 CBAEE059 FO096168 11/10/09	33_11 MHABU882 FO096169 11/10/09	33_12 MHAEE055 FO096170 11/10/09
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Bromoform	--												
Bromomethane	--												
Carbon Disulfide	--												
Carbon Tetrachloride	--												
Chlorobenzene	--												
Chlorodibromomethane	--												
Chloroethane	--												
Chloroform	--												
Chloromethane	--												
cis-1,2-dichloroethylene	--												
cis-1,3-Dichloropropene	--												
Dibromomethane	--												
Dichlorodifluoromethane	--												
Iodomethane (Methyl Iodide)	--												
Isopropylbenzene	--												
Methylene chloride	--												
Styrene	--												
trans-1,4-Dichloro-2-butene	--												
Trichlorofluoromethane	--												
Vinyl Acetate	--												
Benzene	--												
EthylBenzene	--												
m,p-Xylene	--												
o-Xylene	--												
Xylenes (total)	--												
Methyltert-butyl ether	--												
Tetrachloroethene (PCE)	500												
Toluene	--												
trans-1,2-Dichloroethene	--												
trans-1,3-Dichloropropene	--												
Trichloroethene (TCE)	2,100												
Vinyl Chloride	--												
Semivolatile Organic Compounds													
Halogenated Compounds													
1,2-Dichlorobenzene	1,700												
1,3-Dichlorobenzene	300												
1,4-Dichlorobenzene	300												
1,2,4-Trichlorobenzene	9,200												
Hexachlorobenzene	19												
2-Chloronaphthalene	--												
Hexachloroethane	--												
Hexachlorobutadiene	600												
Hexachlorocyclopentadiene	400												
2,2'-oxybis(1-chloropropane)	--												

Units	Screening Value[1]	33_1 MHABU888 FO095788 08/04/09	33_2 MHAEE077 FO095789 08/04/09	33_3 MHABU883 FO095790 08/04/09	33_4 MHABU881 FO095791 08/04/09	33_5 MHABU941 FO095792 08/04/09	33_6 MHABU929 FO095793 08/05/09	33_7 MHANY616 FO095794 08/07/09	33_8 MHAEE063 FO096166 11/10/09	33_9 MHABU893 FO096167 11/10/09	33_10 CBAEE059 FO096168 11/10/09	33_11 MHABU882 FO096169 11/10/09	33_12 MHAEE055 FO096170 11/10/09
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Bis-(2-chloroethoxy) methane	--												
Bis-(2-chloroethyl) ether	--												
4-Chlorophenyl-phenyl ether	--												
4-bromophenyl-phenyl ether	--												
3,3'-Dichlorobenzidine	--												
4-Chloroaniline	--												
Organonitrogen Compounds													
Nitrobenzene	--												
Aniline	--												
2-Nitroaniline	--												
3-Nitroaniline	--												
4-Nitroaniline	--												
N-Nitrosodimethylamine	--												
N-Nitroso-di-n-propylamine	--												
N-Nitrosodiphenylamine	--												
2,4-Dinitrotoluene	--												
2,6-Dinitrotoluene	--												
Carbazole	1,600												
Oxygen-Containing Compounds													
Benzoic Acid	--												
Benzyl Alcohol	--												
Dibenzofuran	--												
Isophorone	--												
Phenols and Substituted Phenols													
Phenol	50												
2-Methylphenol (o-Cresol)	--												
4-Methylphenol (p-Cresol)	--												
2,4-Dimethylphenol	--												
2-Chlorophenol	--												
2,4-Dichlorophenol	--												
2,4,5-Trichlorophenol	--												
2,4,6-trichlorophenol	--												
2,3,4,6-Tetrachlorophenol	--												
Pentachlorophenol	250												
4-Chloro-3-methylphenol	--												
2-Nitrophenol	--												
4-Nitrophenol	--												
2,4-Dinitrophenol	--												
Methyl-4,6-Dinitrophenol 2-	--												

Units	Screening Value[1]	33_1 MHABU888 FO095788 08/04/09	33_2 MHAEE077 FO095789 08/04/09	33_3 MHABU883 FO095790 08/04/09	33_4 MHABU881 FO095791 08/04/09	33_5 MHABU941 FO095792 08/04/09	33_6 MHABU929 FO095793 08/05/09	33_7 MHANY616 FO095794 08/07/09	33_8 MHAEE063 FO096166 11/10/09	33_9 MHABU893 FO096167 11/10/09	33_10 CBAEE059 FO096168 11/10/09	33_11 MHABU882 FO096169 11/10/09	33_12 MHAEE055 FO096170 11/10/09
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Phthalate Esters[3]													
Dimethylphthalate	--	<2330	<1660	NA	NA	NA	NA	<4,400	<766	<1220	<699	<138	<748
Diethylphthalate	600	<2330	<1660	NA	NA	NA	NA	<4,400	<766	<1220	<699	<138	<748
Di-n-butylphthalate	60	<2330	<1660	NA	NA	NA	NA	<4,400	**782**	<1220	<699	<138	<748
Butylbenzylphthalate	--	<2330	<1660	NA	NA	NA	NA	<4,400	**985**	<1220	**3320**	**521**	<748
Di-n-octylphthalate	--	<2330	<1660	NA	NA	NA	NA	<4,400	<766	<1220	<1050	<138	<748
bis(2-Ethylhexyl)phthalate	330	**6,920**	**51,000**	NA	NA	NA	NA	**35,300**	**5720**	**18600**	**5720**	**1670**	**3470**
Polycyclic Aromatic Hydrocarbons[3]													
Naphthalene	561	<233	<83.0	NA	NA	NA	NA	<220	<95.8	<122	<87.3	**94.6**	<93.5
2-Methylnaphthalene	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	200	<233	<83.0	NA	NA	NA	NA	<220	<95.8	<122	<87.3	<34.5	<93.5
Acenaphthene	300	<233	<83.0	NA	NA	NA	NA	<220	<95.8	<122	<87.3	<34.5	<93.5
Fluorene	536	<233	<83.0	NA	NA	NA	NA	<220	<95.8	<122	<87.3	<34.5	<93.5
Phenanthrene	1,170	<233	**104**	NA	NA	NA	NA	**767**	**160**	**1,140**	**307**	**141**	**133**
Anthracene	845	<233	<83.0	NA	NA	NA	NA	<220	<95.8	<122	<87.3	<34.5	<93.5
Fluoranthene	2,230	<233	**117**	NA	NA	NA	NA	**782**	**293**	**2,310**	**270**	**401**	**230**
Pyrene	1,520	**346**	**133**	NA	NA	NA	NA	**729**	**256**	**1,280**	**250**	**310**	**234**
Benzo(a)anthracene	1,050	<233	<83.0	NA	NA	NA	NA	**263**	**154**	**367**	<87.3	**147**	**245**
Chrysene	1,290	**265**	**152**	NA	NA	NA	NA	**583**	**275**	**683**	**190**	**191**	**481**
Benzo(b)fluoranthene	--	<233	**96.9**	NA	NA	NA	NA	**361**	**271**	**588**	**158**	**123**	**491**
Benzo(k)fluoranthene	13,000	<233	<83.0	NA	NA	NA	NA	**236**	**140**	**318**	<87.3	**107**	**260**
Benzo(a)pyrene	1,450	<233	<83.0	NA	NA	NA	NA	**251**	**195**	**356**	**98.9**	**116**	**322**
Indeno(1,2,3-cd)pyrene	100	<233	<83.0	NA	NA	NA	NA	<220	**153**	**292**	<87.3	**61.7**	**276**
Dibenz(a,h)anthracene	1,300	<233	<83.0	NA	NA	NA	NA	<220	<95.8	<122	<87.3	<34.5	**108**
Benzo(g,h,i)perylene	300	**347**	**138**	NA	NA	NA	NA	**408**	**223**	**431**	**177**	**78.3**	**484**
Chlorinated Dioxins and Furans													
2,3,7,8,-TCDD (Toxicity Equivalence Quotient)	--												
2,3,7,8,-TCDD	0.0000091												
2,3,7,8,-TCDF	0.00077												
1,2,3,7,8,-PeCDD	0.0026												
1,2,3,7,8,-PeCDF	0.0026												
2,3,4,7,8,-PeCDF	0.00003												
2,3,4,7,8,-PeCDF	--												
1,2,3,6,7,8,-HxCDD	--												
1,2,3,7,8,9,-HxCDD	--												
1,2,3,4,7,8,-HxCDF	0.0027												
1,2,3,6,7,8,-HxCDF	0.0027												
1,2,3,7,8,9,-HxCDF	0.0027												
2,3,4,6,7,8,-HxCDF	0.0027												
1,2,3,4,6,7,8,-HpCDD	0.69												
1,2,3,4,6,7,8,-HpCDF	0.69												

Units	Screening Value[1]	33_1 MHABU888 FO095788 08/04/09	33_2 MHAEE077 FO095789 08/04/09	33_3 MHABU883 FO095790 08/04/09	33_4 MHABU881 FO095791 08/04/09	33_5 MHABU941 FO095792 08/04/09	33_6 MHABU929 FO095793 08/05/09	33_7 MHANY616 FO095794 08/07/09	33_8 MHAEE063 FO096166 11/10/09	33_9 MHABU893 FO096167 11/10/09	33_10 CBAEE059 FO096168 11/10/09	33_11 MHABU882 FO096169 11/10/09	33_12 MHAEE055 FO096170 11/10/09
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
1,2,3,4,7,8,9,-HpCDF	0.69												
OCDD	23												
OCDF	23												
Total tetrachlorinated dioxins	--												
Total pentachlorinated dioxins	--												
Total hexachlorinated dioxins	--												
Total heptachlorinated dioxins	--												
Total tetrachlorinated furans	--												
Total pentachlorinated furans	--												
Total hexachlorinated furans	--												
Total heptachlorinated furans	--												
Other Analytes													
TPH Diesel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH Heavy Oil	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Gx	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	--	**56,300,000**	**86,800,000**	**13,700,000**	**42,900,000**	**10,800,000**	**99,100,000**	**103,000,000**	NA	NA	NA	NA	NA
Total Suspended Solids	--	**79.0** [3]	**81.5** [3]	**80.6** [3]	**40.0** [3]	**86.3** [3]	**53.0** [3]	**32.7** [3]	**70.9** [3]	**57.1** [3]	**74.3** [3]	**78.4** [3]	**76.5** [3]

[1] The source of each SLV is documented in Table 3.1 of the Portland Harbor Joint Source Control Strategy, which can be viewed at http://www.deq.state.or.us/lq/cu/nwr/PortlandHarbor/docs/JSCSFinalTable03_1.pdf

[2] Pthalate Esters and Polycyclic Aromatic Hydrocarbons analyzed using EPA Method 8270M-SIM

[3] This figure represents % solids by weight.

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
(503) 823-5696

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 8/5/09
Page: 1 of 1
Collected By: PTB, JXB, MJS, ECH, LAP

Project Name: PORTLAND HARBOR INLINE SAMP
File Number: 1020.001 Matrix: SEDIMENT

OUTFALL 33

Requested Analyses

WPCL Sample I.D.	Location	Point Code	Sample Date	Sample Time	Sample Type	Organics: PCB Aroclors - LL	Organics: PAH+Phthalates by TA					General: Total Solids	General: TOC		Metals: Total Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn)	Field Comments
FO095788	IL-33-ABU888-0809 240 SE CLAY ST	33_1	8/4/09	0954	C	●	●					●	●		●	One jar 2/3 full PRIORITY: PCB, TOC 8/5/09
FO095789	IL-33-AEE077-0809 SE MARKET & 2ND	33_2	8/4/09	1026	C	●	●					●	●		●	Four jars
FO095790	IL-33-ABU883-0809 120 SE CLAY ST	33_3	8/4/09	1149	C	●						●	●			Four jars - Hold extra sample jars for possible PAH+Phthalates and metals
FO095791	IL-33-ABU881-0809 SE CLAY & WATER	33_4	8/4/09	1307	C	●						●	●			Two Jars
FO095792	IL-33-ABU941-0809 SE WATER & CLAY	33_5	8/4/09	1348	C	●						●	●			Four jars - Hold extra sample jars for possible PAH+Phthalates and metals
FO095793	IL-33-ABU929-0809 W OF CLAY & WATER	33_6	8/5/09	1120	C	●						●	●			One full jar

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.	Relinquished By: 4.
Signature: Peter Bryant Time: 1536	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Peter Bryant Date: 8/5/09	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Received By: 1.	**Received By: 2.**	**Received By: 3.**	**Received By: 4.**
Signature: Time: 1536	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: MacKenzie Zirk Date: 8/5/9	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:

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: **FO095788** **Sample Collected:** 08/04/09 09:54 **Sample Received:** 08/05/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-ABU888-0809
240 SE CLAY ST
Sample Point Code: 33_1
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 2
System ID: AN07698
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/JXB/MJS/ECH/L

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. LAB: The reported values for PCB Aroclors 1254 and 1260 may be affected by non-target interferences.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	79.0	% W/W	0.01	SM 2540 G	08/12/09
METALS					
ARSENIC	4.92	mg/Kg dry wt	0.50	EPA 6020	08/14/09
CADMIUM	0.88	mg/Kg dry wt	0.10	EPA 6020	08/14/09
CHROMIUM	48.8	mg/Kg dry wt	0.50	EPA 6020	08/14/09
COPPER	110	mg/Kg dry wt	0.25	EPA 6020	08/14/09
LEAD	105	mg/Kg dry wt	0.10	EPA 6020	08/14/09
MERCURY	0.092	mg/Kg dry wt	0.010	EPA 6020	08/14/09
NICKEL	34.4	mg/Kg dry wt	0.25	EPA 6020	08/14/09
SILVER	0.22	mg/Kg dry wt	0.10	EPA 6020	08/14/09
ZINC	472	mg/Kg dry wt	0.50	EPA 6020	08/14/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1248	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1254	28	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1260	26	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	56300	mg/Kg dry wt	100	EPA 9060 MOD	08/14/09
POLYNUCLEAR AROMATICS & PHTHALATES - TA					
Acenaphthene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Acenaphthylene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Anthracene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Benzo(a)anthracene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Benzo(a)pyrene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Benzo(b)fluoranthene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Benzo(ghi)perylene	347	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Benzo(k)fluoranthene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Bis(2-ethylhexyl) phthalate	6920	µg/Kg dry wt	2330	EPA8270M-SIM	08/11/09

Report Date: 08/25/09 **Validated By:**

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: **FO095788** **Sample Collected:** 08/04/09 09:54 **Sample Received:** 08/05/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-ABU888-0809
240 SE CLAY ST
Sample Point Code: 33_1
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 2 of 2
System ID: AN07698
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/JXB/MJS/ECH/L

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. LAB: The reported values for PCB Aroclors 1254 and 1260 may be affected by non-target interferences.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Butyl benzyl phthalate	<2330	µg/Kg dry wt	2330	EPA8270M-SIM	08/11/09
Chrysene	265	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Dibenzo(a,h)anthracene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Diethyl phthalate	<2330	µg/Kg dry wt	2330	EPA8270M-SIM	08/11/09
Dimethyl phthalate	<2330	µg/Kg dry wt	2330	EPA8270M-SIM	08/11/09
Di-n-butyl phthalate	<2330	µg/Kg dry wt	2330	EPA8270M-SIM	08/11/09
Di-n-octyl phthalate	<2330	µg/Kg dry wt	2330	EPA8270M-SIM	08/11/09
Fluoranthene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Fluorene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Indeno(1,2,3-cd)pyrene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Naphthalene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Phenanthrene	<233	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09
Pyrene	346	µg/Kg dry wt	233	EPA8270M-SIM	08/11/09

End of Report for Sample ID: FO095788

Report Date: 08/25/09 **Validated By:**

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: **FO095789** **Sample Collected:** 08/04/09 10:26 **Sample Received:** 08/05/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-AEE077-0809
SE MARKET & 2ND
Sample Point Code: 33_2
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 2
System ID: AN07699
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/JXB/MJS/ECH/L

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. LAB: The reported values for PCB Aroclors 1254 and 1260 may be affected by non-target interferences.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	81.5	% W/W	0.01	SM 2540 G	08/08/09
METALS					
ARSENIC	3.12	mg/Kg dry wt	0.50	EPA 6020	08/11/09
CADMIUM	5.44	mg/Kg dry wt	0.10	EPA 6020	08/11/09
CHROMIUM	37.1	mg/Kg dry wt	0.50	EPA 6020	08/11/09
COPPER	776	mg/Kg dry wt	0.25	EPA 6020	08/11/09
LEAD	666	mg/Kg dry wt	0.10	EPA 6020	08/11/09
MERCURY	0.336	mg/Kg dry wt	0.010	EPA 6020	08/11/09
NICKEL	23.6	mg/Kg dry wt	0.25	EPA 6020	08/11/09
SILVER	0.25	mg/Kg dry wt	0.10	EPA 6020	08/11/09
ZINC	2000	mg/Kg dry wt	0.50	EPA 6020	08/11/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1248	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1254	46	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1260	59	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	86800	mg/Kg dry wt	100	EPA 9060 MOD	08/15/09
POLYNUCLEAR AROMATICS & PHTHALATES - TA					
Acenaphthene	<83.0	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Acenaphthylene	<83.0	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Anthracene	<83.0	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Benzo(a)anthracene	<83.0	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Benzo(a)pyrene	<83.0	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Benzo(b)fluoranthene	96.9	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Benzo(ghi)perylene	138	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Benzo(k)fluoranthene	<83.0	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Bis(2-ethylhexyl) phthalate	51000	µg/Kg dry wt	8300	EPA8270M-SIM	08/11/09

Report Date: 08/25/09 **Validated By:**

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: **FO095789** **Sample Collected:** 08/04/09 10:26 **Sample Received:** 08/05/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-AEE077-0809
SE MARKET & 2ND
Sample Point Code: 33_2
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 2 of 2
System ID: AN07699
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/JXB/MJS/ECH/L

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. LAB: The reported values for PCB Aroclors 1254 and 1260 may be affected by non-target interferences.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Butyl benzyl phthalate	<1660	µg/Kg dry wt	1660	EPA8270M-SIM	08/11/09
Chrysene	152	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Dibenzo(a,h)anthracene	<83.0	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Diethyl phthalate	<1660	µg/Kg dry wt	1660	EPA8270M-SIM	08/11/09
Dimethyl phthalate	<1660	µg/Kg dry wt	1660	EPA8270M-SIM	08/11/09
Di-n-butyl phthalate	<1660	µg/Kg dry wt	1660	EPA8270M-SIM	08/11/09
Di-n-octyl phthalate	<1660	µg/Kg dry wt	1660	EPA8270M-SIM	08/11/09
Fluoranthene	117	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Fluorene	<83.0	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Indeno(1,2,3-cd)pyrene	<83.0	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Naphthalene	<83.0	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Phenanthrene	104	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09
Pyrene	133	µg/Kg dry wt	83.0	EPA8270M-SIM	08/11/09

End of Report for Sample ID: FO095789

Report Date: 08/25/09 **Validated By:**

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: **FO095790**

Sample Collected: 08/04/09 11:49
Sample Received: 08/05/09

Sample Status: COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-ABU883-0809
120 SE CLAY ST
Sample Point Code: 33_3
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 1
System ID: AN07700
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/JXB/MJS/ECH/L

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. LAB: A trace level of PCB Aroclor 1254 may be present in this sample but is not clearly distingishable due to non-target interferences.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	80.6	% W/W	0.01	SM 2540 G	08/12/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1248	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1254	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1260	12	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	13700	mg/Kg dry wt	100	EPA 9060 MOD	08/15/09

End of Report for Sample ID: FO095790

Report Date: 08/25/09 **Validated By:**

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: **FO095791** **Sample Collected:** 08/04/09 13:07 **Sample Received:** 08/05/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-ABU881-0809
SE CLAY & WATER
Sample Point Code: 33_4
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 1
System ID: AN07701
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/JXB/MJS/ECH/L

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. LAB: Reporting limits are raised for PCB Aroclors due to low solids content of the sample.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	40.0	% W/W	0.01	SM 2540 G	08/12/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1221	<40	µg/Kg dry wt	40	EPA 8082	08/12/09
Aroclor 1232	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1248	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1254	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1260	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1262	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1268	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	42900	mg/Kg dry wt	100	EPA 9060 MOD	08/15/09

End of Report for Sample ID: FO095791

Report Date: 08/25/09 **Validated By:**

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: **FO095792**

Sample Collected: 08/04/09 13:48
Sample Received: 08/05/09

Sample Status: **COMPLETE AND VALIDATED**

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-ABU941-0809
SE WATER & CLAY
Sample Point Code: 33_5
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 1
System ID: AN07702
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/JXB/MJS/ECH/L

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	86.3	% W/W	0.01	SM 2540 G	08/12/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1248	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1254	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1260	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	08/12/09
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	10800	mg/Kg dry wt	100	EPA 9060 MOD	08/15/09

End of Report for Sample ID: FO095792

Report Date: 08/25/09

Validated By:

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: **FO095793** **Sample Collected:** 08/05/09 11:20 **Sample Received:** 08/05/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-ABU929-0809
W OF CLAY & WATER
Sample Point Code: 33_6
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 1
System ID: AN07703
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/JXB/MJS/ECH/L

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. LAB: Reporting limits are raised for non-detected PCB Aroclors due to low solids content of the sample. NOTE: The sample was re-analyzed for PCB Aroclors starting on 9/3/09; the re-analysis result for Aroclor 1260 was 61300 ug/Kg dry wt.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	53.0	% W/W	0.01	SM 2540 G	08/12/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1221	<40	µg/Kg dry wt	40	EPA 8082	08/12/09
Aroclor 1232	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1248	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1254	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1260	58000	µg/Kg dry wt	10000	EPA 8082	08/12/09
Aroclor 1262	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
Aroclor 1268	<20	µg/Kg dry wt	20	EPA 8082	08/12/09
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	99100	mg/Kg dry wt	100	EPA 9060 MOD	08/15/09

End of Report for Sample ID: FO095793

UPDATED DATA
REASON: Comment on requested Re-analysis
DATE: 9/23/09

Report Date: 09/23/09 **Validated By:**

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

ORELAP#: OR100021

December 04, 2009

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 11/12/09 14:50. The following list is a summary of the Work Orders contained in this report, generated on 12/04/09 08:07.

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

Work Order	Project	ProjectNumber
PSK0395	Portland Harbor	36238

TestAmerica Portland

Howard Holmes, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FO 096166	PSK0395-01	Soil	11/10/09 11:49	11/12/09 14:50
FO 096167	PSK0395-02	Soil	11/10/09 11:19	11/12/09 14:50
FO 096168	PSK0395-03	Soil	11/10/09 12:29	11/12/09 14:50
FO 096169	PSK0395-04	Soil	11/10/09 13:20	11/12/09 14:50
FO 096170	PSK0395-05	Soil	11/10/09 14:16	11/12/09 14:50
FO 096171	PSK0395-06	Water	11/10/09 14:00	11/12/09 14:50

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Analytical Case Narrative

TestAmerica - Portland, OR

PSK0395

8270 SIM PDX-UIC (water)
Naphthalene was detected above the MRL in the Method Blank for batch 9110563. Naphthalene was not detected in sample PSK0395-06 and therefore did not need to be re-extracted.

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Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0395-01 (FO 096166)			**Soil**			**Sampled: 11/10/09 11:49**				**RL3**
Acenaphthene	EPA 8270m	ND	-----	95.8	ug/kg dry	5x	9110506	11/16/09 11:40	11/18/09 13:35	
Acenaphthylene	"	ND	-----	95.8	"	"	"	"	"	
Anthracene	"	ND	-----	95.8	"	"	"	"	"	
Benzo (a) anthracene	"	**154**	-----	95.8	"	"	"	"	"	
Benzo (a) pyrene	"	**195**	-----	95.8	"	"	"	"	"	
Benzo (b) fluoranthene	"	**271**	-----	95.8	"	"	"	"	"	
Benzo (ghi) perylene	"	**223**	-----	95.8	"	"	"	"	"	
Benzo (k) fluoranthene	"	**140**	-----	95.8	"	"	"	"	"	
Chrysene	"	**275**	-----	95.8	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	-----	95.8	"	"	"	"	"	
Fluoranthene	"	**293**	-----	95.8	"	"	"	"	"	
Fluorene	"	ND	-----	95.8	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	**153**	-----	95.8	"	"	"	"	"	
Naphthalene	"	ND	-----	95.8	"	"	"	"	"	
Phenanthrene	"	**160**	-----	95.8	"	"	"	"	"	
Pyrene	"	**256**	-----	95.8	"	"	"	"	"	
Surrogate(s):	*Fluorene-d10*			*90.8%*		*24 - 125 %*				*"*
	Pyrene-d10			*79.7%*		*41 - 141 %*				*"*
	Benzo (a) pyrene-d12			*79.2%*		*38 - 143 %*				*"*
PSK0395-02 (FO 096167)			**Soil**			**Sampled: 11/10/09 11:19**				**RL3**
Acenaphthene	EPA 8270m	ND	-----	122	ug/kg dry	5x	9110506	11/16/09 11:40	11/18/09 14:04	
Acenaphthylene	"	ND	-----	122	"	"	"	"	"	
Anthracene	"	ND	-----	122	"	"	"	"	"	
Benzo (a) anthracene	"	**367**	-----	122	"	"	"	"	"	
Benzo (a) pyrene	"	**356**	-----	122	"	"	"	"	"	
Benzo (b) fluoranthene	"	**588**	-----	122	"	"	"	"	"	
Benzo (ghi) perylene	"	**431**	-----	122	"	"	"	"	"	
Benzo (k) fluoranthene	"	**318**	-----	122	"	"	"	"	"	
Chrysene	"	**683**	-----	122	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	-----	122	"	"	"	"	"	
Fluoranthene	"	**2310**	-----	122	"	"	"	"	"	
Fluorene	"	ND	-----	122	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	**292**	-----	122	"	"	"	"	"	
Naphthalene	"	ND	-----	122	"	"	"	"	"	
Phenanthrene	"	**1140**	-----	122	"	"	"	"	"	

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Howard Holmes, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0395-02 (FO 096167)			**Soil**			**Sampled: 11/10/09 11:19**				**RL3**
Pyrene	EPA 8270m	**1280**	-----	122	ug/kg dry	5x	9110506	11/16/09 11:40	11/18/09 14:04	
Surrogate(s): Fluorene-d10				*83.0%*		*24 - 125 %*				"
Pyrene-d10				*74.5%*		*41 - 141 %*				"
Benzo (a) pyrene-d12				*89.5%*		*38 - 143 %*				"
PSK0395-03 (FO 096168)			**Soil**			**Sampled: 11/10/09 12:29**				**RL3**
Acenaphthene	EPA 8270m	ND	-----	87.3	ug/kg dry	5x	9110506	11/16/09 11:40	11/18/09 14:33	
Acenaphthylene	"	ND	-----	87.3	"	"	"	"	"	
Anthracene	"	ND	-----	87.3	"	"	"	"	"	
Benzo (a) anthracene	"	ND	-----	87.3	"	"	"	"	"	
Benzo (a) pyrene	"	**98.9**	-----	87.3	"	"	"	"	"	
Benzo (b) fluoranthene	"	**158**	-----	87.3	"	"	"	"	"	
Benzo (ghi) perylene	"	**177**	-----	87.3	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND	-----	87.3	"	"	"	"	"	
Chrysene	"	**190**	-----	87.3	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	-----	87.3	"	"	"	"	"	
Fluoranthene	"	**270**	-----	87.3	"	"	"	"	"	
Fluorene	"	ND	-----	87.3	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	-----	87.3	"	"	"	"	"	
Naphthalene	"	ND	-----	87.3	"	"	"	"	"	
Phenanthrene	"	**307**	-----	87.3	"	"	"	"	"	
Pyrene	"	**250**	-----	87.3	"	"	"	"	"	
Surrogate(s): Fluorene-d10				*85.4%*		*24 - 125 %*				"
Pyrene-d10				*81.1%*		*41 - 141 %*				"
Benzo (a) pyrene-d12				*89.1%*		*38 - 143 %*				"
PSK0395-04 (FO 096169)			**Soil**			**Sampled: 11/10/09 13:20**				**RL3**
Acenaphthene	EPA 8270m	ND	-----	34.5	ug/kg dry	2x	9110506	11/16/09 11:40	11/18/09 15:02	
Acenaphthylene	"	ND	-----	34.5	"	"	"	"	"	
Anthracene	"	ND	-----	34.5	"	"	"	"	"	
Benzo (a) anthracene	"	**147**	-----	34.5	"	"	"	"	"	
Benzo (a) pyrene	"	**116**	-----	34.5	"	"	"	"	"	
Benzo (b) fluoranthene	"	**123**	-----	34.5	"	"	"	"	"	
Benzo (ghi) perylene	"	**78.3**	-----	34.5	"	"	"	"	"	
Benzo (k) fluoranthene	"	**107**	-----	34.5	"	"	"	"	"	
Chrysene	"	**191**	-----	34.5	"	"	"	"	"	

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Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0395-04 (FO 096169)			**Soil**			**Sampled: 11/10/09 13:20**				**RL3**
Dibenzo (a,h) anthracene	EPA 8270m	ND	-----	34.5	ug/kg dry	2x	9110506	11/16/09 11:40	11/18/09 15:02	
Fluoranthene	"	**401**	-----	34.5	"	"	"	"	"	
Fluorene	"	ND	-----	34.5	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	**61.7**	-----	34.5	"	"	"	"	"	
Naphthalene	"	**94.6**	-----	34.5	"	"	"	"	"	
Phenanthrene	"	**141**	-----	34.5	"	"	"	"	"	
Pyrene	"	**310**	-----	34.5	"	"	"	"	"	
Surrogate(s): Fluorene-d10				*78.3%*		*24 - 125 %*				"
Pyrene-d10				*73.9%*		*41 - 141 %*				"
Benzo (a) pyrene-d12				*86.3%*		*38 - 143 %*				"
PSK0395-05 (FO 096170)			**Soil**			**Sampled: 11/10/09 14:16**				**RL3**
Acenaphthene	EPA 8270m	ND	-----	93.5	ug/kg dry	5x	9110506	11/16/09 11:40	11/18/09 15:30	
Acenaphthylene	"	ND	-----	93.5	"	"	"	"	"	
Anthracene	"	ND	-----	93.5	"	"	"	"	"	
Benzo (a) anthracene	"	**245**	-----	93.5	"	"	"	"	"	
Benzo (a) pyrene	"	**322**	-----	93.5	"	"	"	"	"	
Benzo (b) fluoranthene	"	**491**	-----	93.5	"	"	"	"	"	
Benzo (ghi) perylene	"	**484**	-----	93.5	"	"	"	"	"	
Benzo (k) fluoranthene	"	**260**	-----	93.5	"	"	"	"	"	
Chrysene	"	**481**	-----	93.5	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	**108**	-----	93.5	"	"	"	"	"	
Fluoranthene	"	**230**	-----	93.5	"	"	"	"	"	
Fluorene	"	ND	-----	93.5	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	**276**	-----	93.5	"	"	"	"	"	
Naphthalene	"	ND	-----	93.5	"	"	"	"	"	
Phenanthrene	"	**133**	-----	93.5	"	"	"	"	"	
Pyrene	"	**234**	-----	93.5	"	"	"	"	"	
Surrogate(s): Fluorene-d10				*78.7%*		*24 - 125 %*				"
Pyrene-d10				*73.2%*		*41 - 141 %*				"
Benzo (a) pyrene-d12				*77.1%*		*38 - 143 %*				"

TestAmerica Portland

Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0395-06 (FO 096171)				**Water**		**Sampled: 11/10/09 14:00**				
Bis(2-ethylhexyl)phthalate	EPA 8270m	ND	*0.506*	0.962	ug/l	1x	9110563	11/17/09 14:00	11/19/09 22:07	
Butyl benzyl phthalate	"	ND	*0.506*	0.962	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	*0.506*	0.962	"	"	"	"	"	
Di-n-octyl phthalate	"	ND	*0.506*	0.962	"	"	"	"	"	
Diethyl phthalate	"	ND	*0.506*	0.962	"	"	"	"	"	
Dimethyl phthalate	"	ND	*0.506*	0.962	"	"	"	"	"	
Acenaphthene	"	ND	*0.0192*	0.0192	"	"	"	"	11/20/09 18:47	
Acenaphthylene	"	ND	*0.0192*	0.0192	"	"	"	"	"	
Anthracene	"	ND	*0.0192*	0.0192	"	"	"	"	"	
Benzo (a) anthracene	"	ND	*0.00962*	0.00962	"	"	"	"	"	
Benzo (a) pyrene	"	ND	*0.00962*	0.00962	"	"	"	"	"	
Benzo (b) fluoranthene	"	ND	*0.00962*	0.00962	"	"	"	"	"	
Benzo (ghi) perylene	"	ND	*0.0192*	0.0192	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND	*0.00962*	0.00962	"	"	"	"	"	
Chrysene	"	ND	*0.00962*	0.00962	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	*0.00962*	0.00962	"	"	"	"	"	
Fluoranthene	"	ND	*0.0192*	0.0192	"	"	"	"	"	
Fluorene	"	ND	*0.0192*	0.0192	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	*0.00962*	0.00962	"	"	"	"	"	
Naphthalene	"	ND	*0.0192*	0.0192	"	"	"	"	"	**N1**
Phenanthrene	"	ND	*0.0192*	0.0192	"	"	"	"	"	
Pyrene	"	ND	*0.0192*	0.0192	"	"	"	"	"	

Surrogate(s):	*Fluorene-d10*	*104%*	*25 - 125 %*	*"*
	Pyrene-d10	*104%*	*23 - 150 %*	*"*
	Benzo (a) pyrene-d12	*93.2%*	*10 - 125 %*	*"*

TestAmerica Portland

Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Phthalates per EPA 8270-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed		Notes
PSK0395-01 (FO 096166)			**Soil**			**Sampled: 11/10/09 11:49**					**RL3**
Dimethyl phthalate	EPA 8270m	ND	-----	766	ug/kg dry	20x	9110506	11/16/09 11:40	11/20/09 02:53		
Diethyl phthalate	"	ND	-----	766	"	"	"	"	"		
Di-n-butyl phthalate	"	**782**	-----	766	"	"	"	"	"		
Butyl benzyl phthalate	"	**985**	-----	766	"	"	"	"	"		
Bis(2-ethylhexyl)phthalate	"	**5720**	-----	766	"	"	"	"	"		
Di-n-octyl phthalate	"	ND	-----	766	"	"	"	"	"		
Surrogate(s): 2-Fluorobiphenyl				*97.7%*		*10 - 150 %*				*"*	***Z3***
p-Terphenyl-d14				*135%*		*10 - 150 %*				*"*	***Z3***
PSK0395-02 (FO 096167)			**Soil**			**Sampled: 11/10/09 11:19**					**RL7**
Dimethyl phthalate	EPA 8270m	ND	-----	1220	ug/kg dry	25x	9110506	11/16/09 11:40	11/18/09 14:58		
Diethyl phthalate	"	ND	-----	1220	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	-----	1220	"	"	"	"	"		
Butyl benzyl phthalate	"	ND	-----	1220	"	"	"	"	"		
Bis(2-ethylhexyl)phthalate	"	**18600**	-----	1220	"	"	"	"	"		
Di-n-octyl phthalate	"	ND	-----	1220	"	"	"	"	"		
Surrogate(s): 2-Fluorobiphenyl				*88.2%*		*10 - 150 %*				*"*	***Z3***
p-Terphenyl-d14				*124%*		*10 - 150 %*				*"*	***Z3***
PSK0395-03 (FO 096168)			**Soil**			**Sampled: 11/10/09 12:29**					**RL3**
Dimethyl phthalate	EPA 8270m	ND	-----	699	ug/kg dry	20x	9110506	11/16/09 11:40	11/20/09 02:17		
Diethyl phthalate	"	ND	-----	699	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	-----	699	"	"	"	"	"		
Butyl benzyl phthalate	"	**3320**	-----	699	"	"	"	"	"		
Bis(2-ethylhexyl)phthalate	"	**5720**	-----	699	"	"	"	"	"		
Di-n-octyl phthalate	"	ND	-----	1050	"	"	"	"	"		**RL1**
Surrogate(s): 2-Fluorobiphenyl				*101%*		*10 - 150 %*				*"*	***Z3***
p-Terphenyl-d14				*136%*		*10 - 150 %*				*"*	***Z3***
PSK0395-04 (FO 096169)			**Soil**			**Sampled: 11/10/09 13:20**					**RL3**
Dimethyl phthalate	EPA 8270m	ND	-----	138	ug/kg dry	4x	9110506	11/16/09 11:40	11/18/09 15:34		
Diethyl phthalate	"	ND	-----	138	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	-----	138	"	"	"	"	"		
Butyl benzyl phthalate	"	**521**	-----	138	"	"	"	"	"		
Bis(2-ethylhexyl)phthalate	"	**1670**	-----	138	"	"	"	"	"		
Di-n-octyl phthalate	"	ND	-----	689	"	20x	"	"	11/18/09 13:47		**RL1**

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Phthalates per EPA 8270-SIM

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0395-04 (FO 096169)			**Soil**			**Sampled: 11/10/09 13:20**				**RL3**
Surrogate(s): 2-Fluorobiphenyl			*64.8%*			*10 - 150 %*			*11/18/09 15:34*	
p-Terphenyl-d14			*123%*			*10 - 150 %*			*"*	
PSK0395-05 (FO 096170)			**Soil**			**Sampled: 11/10/09 14:16**				**RL3**
Dimethyl phthalate	EPA 8270m	ND	-----	748	ug/kg dry	20x	9110506	11/16/09 11:40	11/20/09 01:42	
Diethyl phthalate	"	ND	-----	748	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	-----	748	"	"	"	"	"	
Butyl benzyl phthalate	"	ND	-----	748	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	"	**3470**	-----	748	"	"	"	"	"	
Di-n-octyl phthalate	"	ND	-----	748	"	"	"	"	"	
Surrogate(s): 2-Fluorobiphenyl			*101%*			*10 - 150 %*			*"*	***Z3***
p-Terphenyl-d14			*122%*			*10 - 150 %*			*"*	***Z3***

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6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Percent Dry Weight (Solids) per ASTM D2216-80

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0395-01 (FO 096166)			**Soil**			**Sampled: 11/10/09 11:49**				
% Solids	NCA SOP	**68.9**	-----	0.0100	% by Weight	1x	9110501	11/16/09 08:20	11/16/09 08:20	
PSK0395-02 (FO 096167)			**Soil**			**Sampled: 11/10/09 11:19**				
% Solids	NCA SOP	**54.6**	-----	0.0100	% by Weight	1x	9110501	11/16/09 08:20	11/16/09 08:20	
PSK0395-03 (FO 096168)			**Soil**			**Sampled: 11/10/09 12:29**				
% Solids	NCA SOP	**76.0**	-----	0.0100	% by Weight	1x	9110501	11/16/09 08:20	11/16/09 08:20	
PSK0395-04 (FO 096169)			**Soil**			**Sampled: 11/10/09 13:20**				
% Solids	NCA SOP	**77.3**	-----	0.0100	% by Weight	1x	9110501	11/16/09 08:20	11/16/09 08:20	
PSK0395-05 (FO 096170)			**Soil**			**Sampled: 11/10/09 14:16**				
% Solids	NCA SOP	**70.9**	-----	0.0100	% by Weight	1x	9110501	11/16/09 08:20	11/16/09 08:20	

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6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110506 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110506-BLK1)								Extracted: 11/16/09 11:40						
Acenaphthene	EPA 8270m	ND	---	13.3	ug/kg wet	1x	--	--	--	--	--	--	11/17/09 16:56	
Acenaphthylene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Anthracene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Benzo (a) anthracene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Benzo (a) pyrene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Benzo (b) fluoranthene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Benzo (ghi) perylene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Benzo (k) fluoranthene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Chrysene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Dibenzo (a,h) anthracene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Fluoranthene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Fluorene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Indeno (1,2,3-cd) pyrene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Phenanthrene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Pyrene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 67.6%*			*Limits: 24-125%*								*11/17/09 16:56*	
Pyrene-d10		*90.9%*			*41-141%*								*"*	
Benzo (a) pyrene-d12		*94.9%*			*38-143%*								*"*	
LCS (9110506-BS1)								Extracted: 11/16/09 11:40						
Acenaphthene	EPA 8270m	164	---	13.3	ug/kg wet	1x	--	165	99.2%	(33-139)	--	--	11/17/09 17:25	
Benzo (a) pyrene	"	168	---	13.3	"	"	--	"	102%	(45-149)	--	--	"	
Pyrene	"	198	---	13.3	"	"	--	"	120%	(39-138)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 69.8%*			*Limits: 24-125%*								*11/17/09 17:25*	
Pyrene-d10		*108%*			*41-141%*								*"*	
Benzo (a) pyrene-d12		*91.1%*			*38-143%*								*"*	
Matrix Spike (9110506-MS1)					QC Source: PSK0394-01			Extracted: 11/16/09 11:40						
Acenaphthene	EPA 8270m	320	---	386	ug/kg dry	20x	114	240	86.0%	(33-139)	--	--	11/23/09 09:56	
Benzo (a) pyrene	"	467	---	386	"	"	209	"	107%	(45-149)	--	--	"	
Pyrene	"	994	---	386	"	"	605	"	162%	(39-138)	--	--	"	M7
Surrogate(s): Fluorene-d10		*Recovery: 75.7%*			*Limits: 24-125%*								*11/23/09 09:56*	*Z3*
Pyrene-d10		*105%*			*41-141%*								*"*	
Benzo (a) pyrene-d12		*116%*			*38-143%*								*"*	

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6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

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QC Batch: 9110506 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike Dup (9110506-MSD1)					QC Source: PSK0394-01				Extracted: 11/16/09 11:40					
Acenaphthene	EPA 8270m	285	---	391	ug/kg dry	20x	114	243	70.5%	(33-139)	11.6%	(60)	11/18/09 12:37	
Benzo (a) pyrene	"	384	---	391	"	"	209	"	72.0%	(45-149)	19.4%	"	"	
Pyrene	"	722	---	391	"	"	605	"	47.9%	(39-138)	31.7%	"	"	

Surrogate(s):	*Recovery:*	*Limits:*	
Fluorene-d10	*94.1%*	*24-125%*	*11/18/09 12:37*
Pyrene-d10	*81.4%*	*41-141%*	*"*
Benzo (a) pyrene-d12	*97.1%*	*38-143%*	*"*

QC Batch: 9110563 **Water Preparation Method: 3520B Liq-Liq**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110563-BLK1)									Extracted: 11/17/09 14:00					
Bis(2-ethylhexyl)phthalate	EPA 8270m	ND	0.526	1.00	ug/l	1x	--	--	--	--	--	--	11/19/09 16:09	
Butyl benzyl phthalate	"	ND	0.526	1.00	"	"	--	--	--	--	--	--	"	
Di-n-butyl phthalate	"	ND	0.526	1.00	"	"	--	--	--	--	--	--	"	
Di-n-octyl phthalate	"	ND	0.526	1.00	"	"	--	--	--	--	--	--	"	
Diethyl phthalate	"	ND	0.526	1.00	"	"	--	--	--	--	--	--	"	
Dimethyl phthalate	"	ND	0.526	1.00	"	"	--	--	--	--	--	--	"	
Acenaphthene	"	ND	0.0200	0.0200	"	"	--	--	--	--	--	--	11/20/09 16:13	
Acenaphthylene	"	ND	0.0200	0.0200	"	"	--	--	--	--	--	--	"	
Anthracene	"	ND	0.0200	0.0200	"	"	--	--	--	--	--	--	"	
Benzo (a) anthracene	"	ND	0.0100	0.0100	"	"	--	--	--	--	--	--	"	
Benzo (a) pyrene	"	ND	0.0100	0.0100	"	"	--	--	--	--	--	--	"	
Benzo (b) fluoranthene	"	ND	0.0100	0.0100	"	"	--	--	--	--	--	--	"	
Benzo (ghi) perylene	"	ND	0.0200	0.0200	"	"	--	--	--	--	--	--	"	
Benzo (k) fluoranthene	"	ND	0.0100	0.0100	"	"	--	--	--	--	--	--	"	
Chrysene	"	ND	0.0100	0.0100	"	"	--	--	--	--	--	--	"	
Dibenzo (a,h) anthracene	"	ND	0.0100	0.0100	"	"	--	--	--	--	--	--	"	
Fluoranthene	"	ND	0.0200	0.0200	"	"	--	--	--	--	--	--	"	
Fluorene	"	ND	0.0200	0.0200	"	"	--	--	--	--	--	--	"	
Indeno (1,2,3-cd) pyrene	"	ND	0.0100	0.0100	"	"	--	--	--	--	--	--	"	
Naphthalene	"	0.0528	0.0200	0.0200	"	"	--	--	--	--	--	--	"	N1
Phenanthrene	"	ND	0.0200	0.0200	"	"	--	--	--	--	--	--	"	
Pyrene	"	ND	0.0200	0.0200	"	"	--	--	--	--	--	--	"	

Surrogate(s):	*Recovery:*	*Limits:*	
Fluorene-d10	*101%*	*25-125%*	*11/20/09 16:13*
Pyrene-d10	*106%*	*23-150%*	*"*
Benzo (a) pyrene-d12	*92.9%*	*10-125%*	*"*

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6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110563 **Water Preparation Method: 3520B Liq-Liq**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (9110563-BS1)								**Extracted: 11/17/09 14:00**						
Bis(2-ethylhexyl)phthalate	EPA 8270m	4.88	0.526	1.00	ug/l	1x	--	4.00	122%	(20-150)	--	--	11/19/09 18:31	
Butyl benzyl phthalate	"	4.76	0.526	1.00	"	"	--	"	119%	"	--	--	"	
Di-n-butyl phthalate	"	4.34	0.526	1.00	"	"	--	"	109%	"	--	--	"	
Di-n-octyl phthalate	"	4.88	0.526	1.00	"	"	--	"	122%	"	--	--	"	
Diethyl phthalate	"	3.96	0.526	1.00	"	"	--	"	99.0%	"	--	--	"	
Dimethyl phthalate	"	3.84	0.526	1.00	"	"	--	"	96.0%	"	--	--	"	
Acenaphthene	"	2.94	0.0200	0.0200	"	"	--	2.50	118%	(35-120)	--	--	11/20/09 17:19	
Acenaphthylene	"	2.78	0.0200	0.0200	"	"	--	"	111%	(34-116)	--	--	"	
Anthracene	"	2.80	0.0200	0.0200	"	"	--	"	112%	(24-119)	--	--	"	
Benzo (a) anthracene	"	2.75	0.0100	0.0100	"	"	--	"	110%	(36-128)	--	--	"	
Benzo (a) pyrene	"	2.81	0.0100	0.0100	"	"	--	"	113%	(17-128)	--	--	"	
Benzo (b) fluoranthene	"	2.82	0.0100	0.0100	"	"	--	"	113%	(37-131)	--	--	"	
Benzo (ghi) perylene	"	2.73	0.0200	0.0200	"	"	--	"	109%	(26-126)	--	--	"	
Benzo (k) fluoranthene	"	2.90	0.0100	0.0100	"	"	--	"	116%	(18-145)	--	--	"	
Chrysene	"	2.86	0.0100	0.0100	"	"	--	"	114%	(16-137)	--	--	"	
Dibenzo (a,h) anthracene	"	3.00	0.0100	0.0100	"	"	--	"	120%	(20-141)	--	--	"	
Fluoranthene	"	2.52	0.0200	0.0200	"	"	--	"	101%	(31-125)	--	--	"	
Fluorene	"	2.88	0.0200	0.0200	"	"	--	"	115%	(27-124)	--	--	"	
Indeno (1,2,3-cd) pyrene	"	2.88	0.0100	0.0100	"	"	--	"	115%	(30-135)	--	--	"	
Naphthalene	"	2.76	0.0200	0.0200	"	"	--	"	111%	(30-113)	--	--	"	B1, N1
Phenanthrene	"	2.81	0.0200	0.0200	"	"	--	"	112%	(34-126)	--	--	"	
Pyrene	"	3.19	0.0200	0.0200	"	"	--	"	127%	(21-141)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 106%*		*Limits: 25-125%*									*11/20/09 17:19*	
Pyrene-d10		*110%*		*23-150%*									*"*	
Benzo (a) pyrene-d12		*99.2%*		*10-125%*									*"*	
Matrix Spike (9110563-MS1)					**QC Source: PSK0491-06**			**Extracted: 11/17/09 14:00**						
Bis(2-ethylhexyl)phthalate	EPA 8270m	5.28	1.03	1.96	ug/l	2x	0.788	3.92	115%	(10-150)	--	--	11/19/09 19:07	
Butyl benzyl phthalate	"	4.42	1.03	1.96	"	"	ND	"	113%	"	--	--	"	
Di-n-butyl phthalate	"	3.86	1.03	1.96	"	"	ND	"	98.5%	"	--	--	"	
Di-n-octyl phthalate	"	4.61	1.03	1.96	"	"	ND	"	118%	"	--	--	"	
Diethyl phthalate	"	3.68	1.03	1.96	"	"	ND	"	94.0%	"	--	--	"	
Dimethyl phthalate	"	3.40	1.03	1.96	"	"	ND	"	86.7%	"	--	--	"	
Acenaphthene	"	2.27	0.0392	0.0392	"	"	ND	2.45	92.7%	(35-120)	--	--	11/20/09 17:48	
Acenaphthylene	"	2.17	0.0392	0.0392	"	"	ND	"	88.4%	(34-116)	--	--	"	
Anthracene	"	2.30	0.0392	0.0392	"	"	ND	"	93.7%	(24-119)	--	--	"	
Benzo (a) anthracene	"	1.62	0.0196	0.0196	"	"	ND	"	65.9%	(22-129)	--	--	"	
Benzo (a) pyrene	"	1.32	0.0196	0.0196	"	"	ND	"	53.8%	(4-112)	--	--	"	
Benzo (b) fluoranthene	"	1.32	0.0196	0.0196	"	"	ND	"	54.0%	(0-136)	--	--	"	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110563 **Water Preparation Method: 3520B Liq-Liq**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike (9110563-MS1)					QC Source: PSK0491-06			Extracted: 11/17/09 14:00						
Benzo (ghi) perylene	EPA 8270m	1.26	0.0392	0.0392	ug/l	2x	ND	2.45	51.4%	(0-126)	--	--	11/20/09 17:48	
Benzo (k) fluoranthene	"	1.35	0.0196	0.0196	"	"	ND	"	55.0%	(0-145)	--	--	"	
Chrysene	"	1.66	0.0196	0.0196	"	"	0.0126	"	67.4%	(7-137)	--	--	"	
Dibenzo (a,h) anthracene	"	1.29	0.0196	0.0196	"	"	ND	"	52.5%	(0-141)	--	--	"	
Fluoranthene	"	2.21	0.0392	0.0392	"	"	0.0245	"	89.4%	(30-125)	--	--	"	
Fluorene	"	2.48	0.0392	0.0392	"	"	ND	"	101%	(27-124)	--	--	"	
Indeno (1,2,3-cd) pyrene	"	1.24	0.0196	0.0196	"	"	ND	"	50.5%	(0-135)	--	--	"	
Naphthalene	"	2.20	0.0392	0.0392	"	"	0.0285	"	88.6%	(30-126)	--	--	"	B1, N1
Phenanthrene	"	2.28	0.0392	0.0392	"	"	ND	"	93.2%	(34-126)	--	--	"	
Pyrene	"	2.06	0.0392	0.0392	"	"	0.0252	"	83.0%	(14-168)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 85.6%*		*Limits: 25-125%*									*11/20/09 17:48*	
Pyrene-d10		*70.5%*		*23-150%*									*"*	
Benzo (a) pyrene-d12		*35.3%*		*10-125%*									*"*	
Matrix Spike Dup (9110563-MSD1)					QC Source: PSK0491-06			Extracted: 11/17/09 14:00						
Bis(2-ethylhexyl)phthalate	EPA 8270m	5.42	1.01	1.92	ug/l	2x	0.788	3.85	120%	(10-150)	5.00%	(50)	11/19/09 19:43	
Butyl benzyl phthalate	"	4.50	1.01	1.92	"	"	ND	"	117%	"	3.63%	"	"	
Di-n-butyl phthalate	"	3.94	1.01	1.92	"	"	ND	"	102%	"	3.94%	"	"	
Di-n-octyl phthalate	"	4.81	1.01	1.92	"	"	ND	"	125%	"	6.25%	"	"	
Diethyl phthalate	"	3.70	1.01	1.92	"	"	ND	"	96.2%	"	2.38%	"	"	
Dimethyl phthalate	"	3.38	1.01	1.92	"	"	ND	"	88.0%	"	1.42%	"	"	
Acenaphthene	"	2.23	0.0385	0.0385	"	"	ND	2.40	92.8%	(35-120)	0.140%	(45)	11/20/09 18:18	
Acenaphthylene	"	2.13	0.0385	0.0385	"	"	ND	"	88.7%	(34-116)	0.420%	"	"	
Anthracene	"	2.36	0.0385	0.0385	"	"	ND	"	98.2%	(24-119)	4.65%	"	"	
Benzo (a) anthracene	"	1.57	0.0192	0.0192	"	"	ND	"	65.2%	(22-129)	1.16%	"	"	
Benzo (a) pyrene	"	1.23	0.0192	0.0192	"	"	ND	"	51.2%	(4-112)	4.83%	"	"	
Benzo (b) fluoranthene	"	1.29	0.0192	0.0192	"	"	ND	"	53.9%	(0-136)	0.326%	"	"	
Benzo (ghi) perylene	"	1.09	0.0385	0.0385	"	"	ND	"	45.4%	(0-126)	12.4%	"	"	
Benzo (k) fluoranthene	"	1.32	0.0192	0.0192	"	"	ND	"	54.9%	(0-145)	0.111%	"	"	
Chrysene	"	1.62	0.0192	0.0192	"	"	0.0126	"	67.0%	(7-137)	0.564%	"	"	
Dibenzo (a,h) anthracene	"	1.10	0.0192	0.0192	"	"	ND	"	45.7%	(0-141)	13.8%	"	"	
Fluoranthene	"	2.20	0.0385	0.0385	"	"	0.0245	"	90.5%	(30-125)	1.28%	"	"	
Fluorene	"	2.26	0.0385	0.0385	"	"	ND	"	94.2%	(27-124)	7.04%	"	"	
Indeno (1,2,3-cd) pyrene	"	1.07	0.0192	0.0192	"	"	ND	"	44.6%	(0-135)	12.3%	"	"	
Naphthalene	"	2.19	0.0385	0.0385	"	"	0.0285	"	90.0%	(30-126)	1.57%	"	"	B1, N1
Phenanthrene	"	2.31	0.0385	0.0385	"	"	ND	"	96.1%	(34-126)	3.07%	"	"	
Pyrene	"	2.08	0.0385	0.0385	"	"	0.0252	"	85.7%	(14-168)	3.21%	"	"	
Surrogate(s): Fluorene-d10		*Recovery: 86.5%*		*Limits: 25-125%*									*11/20/09 18:18*	
Pyrene-d10		*74.8%*		*23-150%*									*"*	

TestAmerica Portland

Howard Holmes, Project Manager

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110563 **Water Preparation Method: 3520B Liq-Liq**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike Dup (9110563-MSD1)				**QC Source: PSK0491-06**				**Extracted: 11/17/09 14:00**						
Surrogate(s): Benzo (a) pyrene-d12		*Recovery: 43.9%*		*Limits: 10-125%*									*11/20/09 18:18*	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Phthalates per EPA 8270-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110506 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110506-BLK1)								Extracted: 11/16/09 11:40						
Dimethyl phthalate	EPA 8270m	ND	---	26.7	ug/kg wet	1x	--	--	--	--	--	--	11/18/09 10:13	
Diethyl phthalate	"	ND	---	26.7	"	"	--	--	--	--	--	--	"	
Di-n-butyl phthalate	"	ND	---	26.7	"	"	--	--	--	--	--	--	"	
Butyl benzyl phthalate	"	ND	---	26.7	"	"	--	--	--	--	--	--	"	
Bis(2-ethylhexyl)phthalate	"	ND	---	26.7	"	"	--	--	--	--	--	--	"	
Di-n-octyl phthalate	"	ND	---	26.7	"	"	--	--	--	--	--	--	"	
Surrogate(s): 2-Fluorobiphenyl		*Recovery: 79.6%*			*Limits: 10-150%*								*11/18/09 10:13*	
p-Terphenyl-d14		*104%*			*10-150%*								*"*	
LCS (9110506-BS1)								Extracted: 11/16/09 11:40						MNR
Dimethyl phthalate	EPA 8270m	130	---	26.6	ug/kg wet	1x	--	132	98.2%	(20-150)	--	--	11/18/09 10:48	
Diethyl phthalate	"	138	---	26.6	"	"	--	"	105%	"	--	--	"	
Di-n-butyl phthalate	"	153	---	26.6	"	"	--	"	116%	"	--	--	"	
Butyl benzyl phthalate	"	156	---	26.6	"	"	--	"	118%	"	--	--	"	
Bis(2-ethylhexyl)phthalate	"	165	---	26.6	"	"	--	"	125%	"	--	--	"	
Di-n-octyl phthalate	"	158	---	26.6	"	"	--	"	119%	"	--	--	"	
Surrogate(s): 2-Fluorobiphenyl		*Recovery: 76.8%*			*Limits: 10-150%*								*11/18/09 10:48*	
p-Terphenyl-d14		*87.7%*			*10-150%*								*"*	

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Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Percent Dry Weight (Solids) per ASTM D2216-80 - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110501 **Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (9110501-DUP1)					**QC Source: PSK0351-01**				**Extracted: 11/16/09 08:20**					
% Solids	NCA SOP	73.3	---	0.0100	% by Weight	1x	73.1	--	--	--	0.273%	(20)	11/16/09 08:20	
Duplicate (9110501-DUP2)					**QC Source: PSK0351-02**				**Extracted: 11/16/09 08:20**					
% Solids	NCA SOP	72.1	---	0.0100	% by Weight	1x	72.4	--	--	--	0.415%	(20)	11/16/09 08:20	

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Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	12/04/09 08:07

Notes and Definitions

Report Specific Notes:

B1	-	Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.
M7	-	The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
MNR	-	No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.
N1	-	See case narrative.
RL1	-	Reporting limit raised due to sample matrix effects.
RL3	-	Reporting limit raised due to high concentrations of non-target analytes.
RL7	-	Sample required dilution due to high concentrations of target analyte.
Z3	-	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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 Limits	-	Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
Electronic Signature	-	Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* 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

Howard Holmes, Project Manager

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9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210 X
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PSK0395

CLIENT: City of Portland

REPORT TO: ADDRESS: Jennifer Shackelford

PHONE: FAX:

INVOICE TO: Charles Lytle

P.O. NUMBER: 36238

PROJECT NAME: Portland Harbor Inline Samp.

PROJECT NUMBER:

SAMPLED BY:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: ~~10~~ STD. 7 5 4 3 2 1 <1

Petroleum Hydrocarbon Analyses: 5 STD. 4 3 2 1 <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

PRESERVATIVE

REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PAH/Phthalates Low Level *	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	FO096166	11/10/9 1149	X	S	1		
2	FO 096167	1119					
3	FO096168	1229					
4	FO 096169	1320					
5	FO 096170	1416					
6	FO 096171	1400		W			
7							
8							
9							
10							

RELEASED BY: Ronal Kluch		DATE: 11/12/9	RECEIVED BY: [signature]		DATE: 11/12/9
PRINT NAME: Rona Kluch	FIRM: City of Portland	TIME: 11:55	PRINT NAME: Bob F	FIRM: TAP	TIME: 11:55
RELEASED BY: [signature]		DATE: 11/12/9	RECEIVED BY: [signature]		DATE: 11/12/09
PRINT NAME: Bob F	FIRM: TAP	TIME: 14:50	PRINT NAME: Jessica [signature]	FIRM: TAP	TIME: 1450

ADDITIONAL REMARKS: * Same level as VIC project

TEMP: 3.8

PAGE 1 OF 1

TAL-1000(0408)

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PS1C039S Date/Time Received: 11/12/09 1450

Client Name and Project: COFP Portland Harbor

Time Zone:

☐EDT/EST ☐CDT/CST ☐MDT/MST ☑PDT/PST ☐AK ☐OTHER

Unpacking Checks:

Cooler #(s): 1 _____ _____ _____ _____

Temperatures: 3.8 _____ _____ _____ _____

Digi #1 ☐ Digi #2 ☐ IR Gun ☑ (☐Plastic ☑Glass)

Temperature out of Range:

__Not enough or No Ice

__Ice Melted

__W/in 4 Hrs of collection

__Other:_____

Initials: JM

N/A	Yes	No	
☑	☐	☐	1. If ESI client, were temp blanks received? If no, document on NOD.
☑	☐	☐	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. Bottles received intact? If no, document on NOD.
	☑	☐	5. Sample is not multiphasic? If no, document on NOD.
	☑	☐	6. Proper Container and preservatives used? If no, document on NOD.
☑	☐	☐	7. pH of all samples checked and meet requirements? If no, document on NOD.
☑	☐	☐	8. Cyanide samples checked for sulfides and meet requirements? If no, notify PM.
☑	☐	☐	9. HF Dilution required?
	☑	☐	10. Sufficient volume provided for all analysis? If no, document on NOD and consult PM before proceeding.
	☑	☐	11. Did chain of custody agree with samples received? If no, document on NOD.
	☑	☐	12. Is the "Sampled by" section of the COC completed?
☑	☐	☐	13. Were VOA/Oil Syringe samples without headspace?
☑	☐	☐	14. Were VOA vials preserved? ☐HCl ☐Sodium Thiosulfate ☐Ascorbic Acid
	☐	☑	15. Did samples require preservation with sodium thiosulfate?
☑	☐	☐	16. If yes to #14, was the residual chlorine test negative? If no, document on NOD.
☑	☐	☐	17. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.
☑	☐	☐	18. Is sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM before proceeding.
☑	☐	☐	19. Are analyses with short holding times received in hold?
	☑	☐	20. Was Standard Turn Around (TAT) requested?
	☑	☐	21. Receipt date(s) < 48 hours past the collection date(s)? If no, notify PM.

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PSK039S

Login Checks:

Initials: PS

N/A	Yes	No	
	☑	☐	22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM.
☑	☐	☐	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?
	☑	☐	26. Were tests logged checked against the COC?
☑	☐	☐	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:

Initials: PS

N/A	Yes	No	
☑	☐	☐	31. Were the subcontracted samples/containers put in Sx fridge?
☑	☐	☐	32. Were sample bottles and COC double checked for dissolved/filtered metals?
	☑	☐	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).

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
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ORELAP#: OR100021

August 29, 2009

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 08/07/09 16:20. The following list is a summary of the Work Orders contained in this report, generated on 08/29/09 12:34.

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

Work Order	Project	ProjectNumber
PSH0270	Portland Harbor	36238

TestAmerica Portland

Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FO095794	PSH0270-01	Soil	08/07/09 11:08	08/07/09 16:20

TestAmerica Portland

Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSH0270-01 (FO095794)			**Soil**			**Sampled: 08/07/09 11:08**				**RL3**
Acenaphthene	EPA 8270m	ND	-----	220	ug/kg dry	5x	9080367	08/11/09 16:30	08/19/09 21:58	
Acenaphthylene	"	ND	-----	220	"	"	"	"	"	
Anthracene	"	ND	-----	220	"	"	"	"	"	
Benzo (a) anthracene	"	**263**	-----	220	"	"	"	"	"	
Benzo (a) pyrene	"	**251**	-----	220	"	"	"	"	"	
Benzo (b) fluoranthene	"	**361**	-----	220	"	"	"	"	"	
Benzo (ghi) perylene	"	**408**	-----	220	"	"	"	"	"	
Benzo (k) fluoranthene	"	**236**	-----	220	"	"	"	"	"	
Chrysene	"	**583**	-----	220	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	-----	220	"	"	"	"	"	
Fluoranthene	"	**782**	-----	220	"	"	"	"	"	
Fluorene	"	ND	-----	220	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	-----	220	"	"	"	"	"	
Naphthalene	"	ND	-----	220	"	"	"	"	"	
Phenanthrene	"	**767**	-----	220	"	"	"	"	"	
Pyrene	"	**729**	-----	220	"	"	"	"	"	

Surrogate(s):	*Fluorene-d10*	*82.5%*	*24 - 125 %*	"
	Pyrene-d10	*67.8%*	*41 - 141 %*	"
	Benzo (a) pyrene-d12	*75.4%*	*38 - 143 %*	"

TestAmerica Portland

Howard Holmes, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

Phthalates per EPA 8270-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSH0270-01 (FO095794)			**Soil**			**Sampled: 08/07/09 11:08**				**RL3**
Dimethyl phthalate	EPA 8270m	ND	-----	4400	ug/kg dry	50x	9080367	08/11/09 16:30	08/12/09 12:48	
Diethyl phthalate	"	ND	-----	4400	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	-----	4400	"	"	"	"	"	
Butyl benzyl phthalate	"	ND	-----	4400	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	"	**35300**	-----	4400	"	"	"	"	"	
Di-n-octyl phthalate	"	ND	-----	4400	"	"	"	"	"	
Surrogate(s): 2-Fluorobiphenyl				*NR*		*10 - 150 %*			"	***Z3***
p-Terphenyl-d14				*NR*		*10 - 150 %*			"	***Z3***

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

Percent Dry Weight (Solids) per ASTM D2216-80

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSH0270-01 (FO095794)				**Soil**			**Sampled: 08/07/09 11:08**			
% Solids	NCA SOP	**30.4**	-----	0.0100	% by Weight	1x	9080279	08/07/09 18:07	08/07/09 18:07	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

Organic Carbon, Total (TOC)

TestAmerica Connecticut

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSH0270-01 (FO095794)			**Soil**			**Sampled: 08/07/09 11:08**				
Total Organic Carbon - Duplicates	9060	**103000**	*10.4*	100	mg/Kg	1x	30131	08/14/09 23:36	08/14/09 23:36	

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Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9080367 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9080367-BLK1)								Extracted: 08/11/09 12:47						
Acenaphthene	EPA 8270m	ND	---	13.4	ug/kg wet	1x	--	--	--	--	--	--	08/12/09 22:18	
Acenaphthylene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Anthracene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Benzo (a) anthracene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Benzo (a) pyrene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Benzo (b) fluoranthene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Benzo (ghi) perylene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Benzo (k) fluoranthene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Chrysene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Dibenzo (a,h) anthracene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Fluoranthene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Fluorene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Indeno (1,2,3-cd) pyrene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Phenanthrene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Pyrene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 39.1%*			*Limits: 24-125%*								*08/12/09 22:18*	
Pyrene-d10		*88.5%*			*41-141%*								*"*	
Benzo (a) pyrene-d12		*83.6%*			*38-143%*								*"*	
LCS (9080367-BS1)								Extracted: 08/11/09 12:47						
Acenaphthene	EPA 8270m	150	---	13.4	ug/kg wet	1x	--	167	90.1%	(33-139)	--	--	08/12/09 22:48	
Benzo (a) pyrene	"	155	---	13.4	"	"	--	"	93.1%	(45-149)	--	--	"	
Pyrene	"	165	---	13.4	"	"	--	"	99.0%	(39-138)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 90.0%*			*Limits: 24-125%*								*08/12/09 22:48*	
Pyrene-d10		*102%*			*41-141%*								*"*	
Benzo (a) pyrene-d12		*96.6%*			*38-143%*								*"*	
Matrix Spike (9080367-MS1)					QC Source: PSH0262-01			Extracted: 08/11/09 12:47						
Acenaphthene	EPA 8270m	225	---	246	ug/kg dry	10x	ND	306	73.5%	(33-139)	--	--	08/13/09 10:50	
Benzo (a) pyrene	"	402	---	246	"	"	146	"	83.4%	(45-149)	--	--	"	
Pyrene	"	550	---	246	"	"	241	"	101%	(39-138)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 80.3%*			*Limits: 24-125%*								*08/13/09 10:50*	
Pyrene-d10		*68.7%*			*41-141%*								*"*	
Benzo (a) pyrene-d12		*66.5%*			*38-143%*								*"*	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9080367 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike Dup (9080367-MSD1)					QC Source: PSH0262-01				Extracted: 08/11/09 12:47					
Acenaphthene	EPA 8270m	178	---	246	ug/kg dry	10x	ND	306	58.2%	(33-139)	23.2%	(60)	08/13/09 11:20	
Benzo (a) pyrene	"	303	---	246	"	"	146	"	51.1%	(45-149)	28.1%	"	"	
Pyrene	"	414	---	246	"	"	241	"	56.4%	(39-138)	28.2%	"	"	

Surrogate(s):	*Fluorene-d10*	*Recovery: 63.6%*	*Limits: 24-125%*		*08/13/09 11:20*
	Pyrene-d10	*54.9%*	*41-141%*		*"*
	Benzo (a) pyrene-d12	*55.2%*	*38-143%*		*"*

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

Phthalates per EPA 8270-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9080367 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9080367-BLK1)								Extracted: 08/11/09 12:47						
Dimethyl phthalate	EPA 8270m	ND	---	26.8	ug/kg wet	1x	--	--	--	--	--	--	08/12/09 10:24	
Diethyl phthalate	"	ND	---	26.8	"	"	--	--	--	--	--	--	"	
Di-n-butyl phthalate	"	ND	---	26.8	"	"	--	--	--	--	--	--	"	
Butyl benzyl phthalate	"	ND	---	26.8	"	"	--	--	--	--	--	--	"	
Bis(2-ethylhexyl)phthalate	"	ND	---	26.8	"	"	--	--	--	--	--	--	"	
Di-n-octyl phthalate	"	ND	---	26.8	"	"	--	--	--	--	--	--	"	
Surrogate(s): 2-Fluorobiphenyl		*Recovery: 10.8%*			*Limits: 10-150%*								*08/12/09 10:24*	
p-Terphenyl-d14		*99.2%*			*10-150%*								*"*	
LCS (9080367-BS1)								Extracted: 08/11/09 12:47						MNR
Dimethyl phthalate	EPA 8270m	113	---	26.8	ug/kg wet	1x	--	133	84.7%	(20-150)	--	--	08/12/09 11:00	
Diethyl phthalate	"	120	---	26.8	"	"	--	"	90.3%	"	--	--	"	
Di-n-butyl phthalate	"	131	---	26.8	"	"	--	"	98.2%	"	--	--	"	
Butyl benzyl phthalate	"	120	---	26.8	"	"	--	"	89.6%	"	--	--	"	
Bis(2-ethylhexyl)phthalate	"	117	---	26.8	"	"	--	"	87.9%	"	--	--	"	
Di-n-octyl phthalate	"	104	---	26.8	"	"	--	"	78.2%	"	--	--	"	
Surrogate(s): 2-Fluorobiphenyl		*Recovery: 86.8%*			*Limits: 10-150%*								*08/12/09 11:00*	
p-Terphenyl-d14		*83.5%*			*10-150%*								*"*	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

Percent Dry Weight (Solids) per ASTM D2216-80 - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9080279 **Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (9080279-DUP1)					**QC Source: PSH0216-03**				**Extracted: 08/07/09 18:07**					
% Solids	NCA SOP	75.8	---	0.0100	% by Weight	1x	75.5	--	--	--	0.397%	(20)	08/07/09 18:07	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

Organic Carbon, Total (TOC) - Laboratory Quality Control Results

TestAmerica Connecticut

QC Batch: 30131 **Soil Preparation Method: NA**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (220-30131-5)				**QC Source:**				**Extracted: 08/14/09 23:22**						
Total Organic Carbon - Duplicates	9060	3976	10.4	100	mg/Kg	1x	--	3530	113%	(28-172)	--	--	08/14/09 23:22	
Blank (220-30131-6)				**QC Source:**				**Extracted: 08/14/09 23:29**						
Total Organic Carbon - Duplicates	9060	ND	10.4	100	mg/Kg	1x	--	--	--	--	--	--	08/14/09 23:29	

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Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/29/09 12:34

Notes and Definitions

Report Specific Notes:

MNR	-	No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.
RL3	-	Reporting limit raised due to high concentrations of non-target analytes.
Z3	-	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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 Limits	-	Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
Electronic Signature	-	Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* 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.

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11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210 X
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PSH0270

CLIENT: City of Portland

REPORT TO: ADDRESS: Jennifer Shackelford

PHONE: FAX:

INVOICE TO: Charles Lytle

P.O. NUMBER: 36238

PROJECT NAME: Portland Harbor

PROJECT NUMBER: Inline Samp

SAMPLED BY:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: ~~10~~ STD. 7 5 4 3 2 1 <1

Petroleum Hydrocarbon Analyses: 5 STD. 4 3 2 1 <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

PRESERVATIVE

REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PAH + phthalates 8270 SIM (*)	TOC											MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	F0095794	8/7/09 1108	X	X											S	2		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

RELEASED BY: Rona Klneh		DATE: 8/7/09	RECEIVED BY: Bob F		DATE: 8/7/09
PRINT NAME: Rona Klneh	FIRM: City of Portland	TIME: 13:50	PRINT NAME: Bob F	FIRM: TAP	TIME: 13:50
RELEASED BY: Bob F		DATE: 8/7/9	RECEIVED BY: Mariana Ellis		DATE: 8/7/09
PRINT NAME: Bob F	FIRM: TAP	TIME: 16:20	PRINT NAME: Mariana Ellis	FIRM: TAP	TIME: 1620

ADDITIONAL REMARKS: (*) Please run low-level analysis + list as per UIC samples. Thanks

TEMP:

PAGE 1 OF 1

TAL-1000(0408)

3.1C

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PSH0270 Date/Time Received: 8/7/09 1620

Client Name and Project: City of Portland Portland Harbor

Time Zone:
☐EDT/EST ☐CDT/CST ☐MDT/MST ☒PDT/PST ☐AK ☐OTHER

Unpacking Checks:

Cooler #(s): 1

Temperatures: 3.1 C

Digi #1 ☐ Digi #2 ☐ IR Gun ☒ (☐Plastic ☒Glass)

Temperature out of Range:

__Not enough or No Ice
__Ice Melted
__W/in 4 Hrs of collection
__Other:_____

Initials: BVE

N/A	Yes	No	
☒	☐	☐	1. If ESI client, were temp blanks received? If no, document on NOD.
☒	☐	☐	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. Bottles received intact? If no, document on NOD.
	☒	☐	5. Sample is not multiphasic? If no, document on NOD.
	☒	☐	6. Proper Container and preservatives used? If no, document on NOD.
☒	☐	☐	7. pH of all samples checked and meet requirements? If no, document on NOD.
☒	☐	☐	8. Cyanide samples checked for sulfides and meet requirements? If no, notify PM.
☒	☐	☐	9. HF Dilution required?
	☒	☐	10. Sufficient volume provided for all analysis? If no, document on NOD and consult PM before proceeding.
	☒	☐	11. Did chain of custody agree with samples received? If no, document on NOD.
	☐	☒	12. Is the "Sampled by" section of the COC completed?
☒	☐	☐	13. Were VOA/Oil Syringe samples without headspace?
☒	☐	☐	14. Were VOA vials preserved? ☐HCl ☐Sodium Thiosulfate ☐Ascorbic Acid
	☐	☒	15. Did samples require preservation with sodium thiosulfate?
☒	☐	☐	16. If yes to #14, was the residual chlorine test negative? If no, document on NOD.
☒	☐	☐	17. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.
☒	☐	☐	18. Is sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM before proceeding.
☒	☐	☐	19. Are analyses with short holding times received in hold?
	☒	☐	20. Was Standard Turn Around (TAT) requested?
	☒	☐	21. Receipt date(s) < 48 hours past the collection date(s)? If no, notify PM.

TestAmerica Portland

Sample Receiving Checklist

Work Order #: P3H0270

Login Checks:

Initials: BKE

N/A	Yes	No	
	☒	☐	22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM.
☒	☐	☐	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?
	☒	☐	26. Were tests logged checked against the COC?
☒	☐	☐	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:

Initials: BKE

N/A	Yes	No	
☐	☒	☐	31. Were the subcontracted samples/containers put in Sx fridge?
☒	☐	☐	32. Were sample bottles and COC double checked for dissolved/filtered metals?
	☒	☐	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).

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ORELAP#: OR100021

August 19, 2009

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 08/06/09 17:55.
The following list is a summary of the Work Orders contained in this report, generated on 08/19/09 22:47.

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

Work Order	Project	ProjectNumber
PSH0214	Portland Harbor	36238

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FO095788	PSH0214-01	Soil	08/04/09 09:54	08/06/09 17:55
FO095789	PSH0214-02	Soil	08/04/09 10:26	08/06/09 17:55
FO095790	PSH0214-03	Soil	08/04/09 11:49	08/06/09 17:55
FO095791	PSH0214-04	Soil	08/04/09 13:07	08/06/09 17:55
FO095792	PSH0214-05	Soil	08/04/09 13:48	08/06/09 17:55
FO095793	PSH0214-06	Soil	08/05/09 11:20	08/06/09 17:55

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSH0214-01 (FO095788)			**Soil**			**Sampled: 08/04/09 09:54**				**RL3**
Acenaphthene	EPA 8270m	ND	-----	233	ug/kg dry	5x	9080367	08/11/09 16:30	08/13/09 20:34	
Acenaphthylene	"	ND	-----	233	"	"	"	"	"	
Anthracene	"	ND	-----	233	"	"	"	"	"	
Benzo (a) anthracene	"	ND	-----	233	"	"	"	"	"	
Benzo (a) pyrene	"	ND	-----	233	"	"	"	"	"	
Benzo (b) fluoranthene	"	ND	-----	233	"	"	"	"	"	
Benzo (ghi) perylene	"	**347**	-----	233	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND	-----	233	"	"	"	"	"	
Chrysene	"	**265**	-----	233	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	-----	233	"	"	"	"	"	
Fluoranthene	"	ND	-----	233	"	"	"	"	"	
Fluorene	"	ND	-----	233	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	-----	233	"	"	"	"	"	
Naphthalene	"	ND	-----	233	"	"	"	"	"	
Phenanthrene	"	ND	-----	233	"	"	"	"	"	
Pyrene	"	**346**	-----	233	"	"	"	"	"	
Surrogate(s): Fluorene-d10				*95.2%*		*24 - 125 %*	"			"
Pyrene-d10				*89.4%*		*41 - 141 %*	"			"
Benzo (a) pyrene-d12				*90.5%*		*38 - 143 %*	"			"
PSH0214-02 (FO095789)			**Soil**			**Sampled: 08/04/09 10:26**				**RL3**
Acenaphthene	EPA 8270m	ND	-----	83.0	ug/kg dry	5x	9080367	08/11/09 16:30	08/17/09 15:04	
Acenaphthylene	"	ND	-----	83.0	"	"	"	"	"	
Anthracene	"	ND	-----	83.0	"	"	"	"	"	
Benzo (a) anthracene	"	ND	-----	83.0	"	"	"	"	"	
Benzo (a) pyrene	"	ND	-----	83.0	"	"	"	"	"	
Benzo (b) fluoranthene	"	**96.9**	-----	83.0	"	"	"	"	"	
Benzo (ghi) perylene	"	**138**	-----	83.0	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND	-----	83.0	"	"	"	"	"	
Chrysene	"	**152**	-----	83.0	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	-----	83.0	"	"	"	"	"	
Fluoranthene	"	**117**	-----	83.0	"	"	"	"	"	
Fluorene	"	ND	-----	83.0	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	-----	83.0	"	"	"	"	"	
Naphthalene	"	ND	-----	83.0	"	"	"	"	"	
Phenanthrene	"	**104**	-----	83.0	"	"	"	"	"	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

Polynuclear Aromatic Compounds per EPA 8270M-SIM

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSH0214-02 (FO095789)			**Soil**			**Sampled: 08/04/09 10:26**				**RL3**
Pyrene	EPA 8270m	**133**	-----	83.0	ug/kg dry	5x	9080367	08/11/09 16:30	08/17/09 15:04	
Surrogate(s): Fluorene-d10				*77.8%*		*24 - 125 %*	"			"
Pyrene-d10				*69.5%*		*41 - 141 %*	"			"
Benzo (a) pyrene-d12				*69.1%*		*38 - 143 %*	"			"

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6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

Phthalates per EPA 8270-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed		Notes
PSH0214-01 (FO095788)			**Soil**			**Sampled: 08/04/09 09:54**					**RL3**
Dimethyl phthalate	EPA 8270m	ND	-----	2330	ug/kg dry	25x	9080367	08/11/09 16:30	08/12/09 14:37		
Diethyl phthalate	"	ND	-----	2330	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	-----	2330	"	"	"	"	"		
Butyl benzyl phthalate	"	ND	-----	2330	"	"	"	"	"		
Bis(2-ethylhexyl)phthalate	"	**6920**	-----	2330	"	"	"	"	"		
Di-n-octyl phthalate	"	ND	-----	2330	"	"	"	"	"		
Surrogate(s): 2-Fluorobiphenyl				*97.3%*		*10 - 150 %*	"			"	***Z3***
p-Terphenyl-d14				*110%*		*10 - 150 %*	"			"	***Z3***
PSH0214-02 (FO095789)			**Soil**			**Sampled: 08/04/09 10:26**					**RL3**
Dimethyl phthalate	EPA 8270m	ND	-----	1660	ug/kg dry	50x	9080367	08/11/09 16:30	08/12/09 12:12		
Diethyl phthalate	"	ND	-----	1660	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	-----	1660	"	"	"	"	"		
Butyl benzyl phthalate	"	ND	-----	1660	"	"	"	"	"		
Bis(2-ethylhexyl)phthalate	"	**51000**	-----	8300	"	250x	"	"	08/12/09 14:01		
Di-n-octyl phthalate	"	ND	-----	1660	"	50x	"	"	08/12/09 12:12		
Surrogate(s): 2-Fluorobiphenyl				*NR*		*10 - 150 %*	"			"	***Z3***
p-Terphenyl-d14				*NR*		*10 - 150 %*	"			"	***Z3***

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Percent Dry Weight (Solids) per ASTM D2216-80

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSH0214-01 (FO095788)			**Soil**			**Sampled: 08/04/09 09:54**				
% Solids	NCA SOP	**78.4**	-----	0.0100	% by Weight	1x	9080279	08/07/09 18:07	08/07/09 18:07	
PSH0214-02 (FO095789)			**Soil**			**Sampled: 08/04/09 10:26**				
% Solids	NCA SOP	**80.2**	-----	0.0100	% by Weight	1x	9080279	08/07/09 18:07	08/07/09 18:07	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

Organic Carbon, Total (TOC)

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSH0214-01 (FO095788)			**Soil**			**Sampled: 08/04/09 09:54**				
Total Organic Carbon - Duplicates	9060	**56300**	*10.4*	100	mg/Kg	1x	30131	08/14/09 23:50	08/14/09 23:50	
PSH0214-02 (FO095789)			**Soil**			**Sampled: 08/04/09 10:26**				
Total Organic Carbon - Duplicates	9060	**86800**	*10.4*	100	mg/Kg	1x	30131	08/15/09 00:18	08/15/09 00:18	
PSH0214-03 (FO095790)			**Soil**			**Sampled: 08/04/09 11:49**				
Total Organic Carbon - Duplicates	9060	**13700**	*10.4*	100	mg/Kg	1x	30131	08/15/09 00:31	08/15/09 00:31	
PSH0214-04 (FO095791)			**Soil**			**Sampled: 08/04/09 13:07**				
Total Organic Carbon - Duplicates	9060	**42900**	*10.4*	100	mg/Kg	1x	30131	08/15/09 00:45	08/15/09 00:45	
PSH0214-05 (FO095792)			**Soil**			**Sampled: 08/04/09 13:48**				
Total Organic Carbon - Duplicates	9060	**10800**	*10.4*	100	mg/Kg	1x	30131	08/15/09 00:58	08/15/09 00:58	
PSH0214-06 (FO095793)			**Soil**			**Sampled: 08/05/09 11:20**				
Total Organic Carbon - Duplicates	9060	**99100**	*10.4*	100	mg/Kg	1x	30131	08/15/09 01:46	08/15/09 01:46	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9080367 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9080367-BLK1)								Extracted: 08/11/09 12:47						
Acenaphthene	EPA 8270m	ND	---	13.4	ug/kg wet	1x	--	--	--	--	--	--	08/12/09 22:18	
Acenaphthylene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Anthracene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Benzo (a) anthracene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Benzo (a) pyrene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Benzo (b) fluoranthene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Benzo (ghi) perylene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Benzo (k) fluoranthene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Chrysene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Dibenzo (a,h) anthracene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Fluoranthene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Fluorene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Indeno (1,2,3-cd) pyrene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Phenanthrene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Pyrene	"	ND	---	13.4	"	"	--	--	--	--	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 39.1%*			*Limits: 24-125%*	"							*08/12/09 22:18*	
Pyrene-d10		*88.5%*			*41-141%*	"							"	
Benzo (a) pyrene-d12		*83.6%*			*38-143%*	"							"	
LCS (9080367-BS1)								Extracted: 08/11/09 12:47						
Acenaphthene	EPA 8270m	150	---	13.4	ug/kg wet	1x	--	167	90.1%	(33-139)	--	--	08/12/09 22:48	
Benzo (a) pyrene	"	155	---	13.4	"	"	--	"	93.1%	(45-149)	--	--	"	
Pyrene	"	165	---	13.4	"	"	--	"	99.0%	(39-138)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 90.0%*			*Limits: 24-125%*	"							*08/12/09 22:48*	
Pyrene-d10		*102%*			*41-141%*	"							"	
Benzo (a) pyrene-d12		*96.6%*			*38-143%*	"							"	
Matrix Spike (9080367-MS1)					QC Source: PSH0262-01			Extracted: 08/11/09 12:47						
Acenaphthene	EPA 8270m	225	---	246	ug/kg dry	10x	ND	306	73.5%	(33-139)	--	--	08/13/09 10:50	
Benzo (a) pyrene	"	402	---	246	"	"	146	"	83.4%	(45-149)	--	--	"	
Pyrene	"	550	---	246	"	"	241	"	101%	(39-138)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 80.3%*			*Limits: 24-125%*	"							*08/13/09 10:50*	
Pyrene-d10		*68.7%*			*41-141%*	"							"	
Benzo (a) pyrene-d12		*66.5%*			*38-143%*	"							"	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9080367 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike Dup (9080367-MSD1)					**QC Source: PSH0262-01**				**Extracted: 08/11/09 12:47**					
Acenaphthene	EPA 8270m	178	---	246	ug/kg dry	10x	ND	306	58.2%	(33-139)	23.2%	(60)	08/13/09 11:20	
Benzo (a) pyrene	"	303	---	246	"	"	146	"	51.1%	(45-149)	28.1%	"	"	
Pyrene	"	414	---	246	"	"	241	"	56.4%	(39-138)	28.2%	"	"	

Surrogate(s):	*Fluorene-d10*	*Recovery:*	*63.6%*	*Limits: 24-125%*	*"*	*08/13/09 11:20*
	Pyrene-d10		*54.9%*	*41-141%*	*"*	*"*
	Benzo (a) pyrene-d12		*55.2%*	*38-143%*	*"*	*"*

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

Phthalates per EPA 8270-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9080367 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9080367-BLK1)								Extracted: 08/11/09 12:47						
Dimethyl phthalate	EPA 8270m	ND	---	26.8	ug/kg wet	1x	--	--	--	--	--	--	08/12/09 10:24	
Diethyl phthalate	"	ND	---	26.8	"	"	--	--	--	--	--	--	"	
Di-n-butyl phthalate	"	ND	---	26.8	"	"	--	--	--	--	--	--	"	
Butyl benzyl phthalate	"	ND	---	26.8	"	"	--	--	--	--	--	--	"	
Bis(2-ethylhexyl)phthalate	"	ND	---	26.8	"	"	--	--	--	--	--	--	"	
Di-n-octyl phthalate	"	ND	---	26.8	"	"	--	--	--	--	--	--	"	
Surrogate(s): 2-Fluorobiphenyl		*Recovery: 10.8%*			*Limits: 10-150%*	*"*							*08/12/09 10:24*	
p-Terphenyl-d14		*99.2%*			*10-150%*	*"*							*"*	
LCS (9080367-BS1)								Extracted: 08/11/09 12:47						MNR
Dimethyl phthalate	EPA 8270m	113	---	26.8	ug/kg wet	1x	--	133	84.7%	(20-150)	--	--	08/12/09 11:00	
Diethyl phthalate	"	120	---	26.8	"	"	--	"	90.3%	"	--	--	"	
Di-n-butyl phthalate	"	131	---	26.8	"	"	--	"	98.2%	"	--	--	"	
Butyl benzyl phthalate	"	120	---	26.8	"	"	--	"	89.6%	"	--	--	"	
Bis(2-ethylhexyl)phthalate	"	117	---	26.8	"	"	--	"	87.9%	"	--	--	"	
Di-n-octyl phthalate	"	104	---	26.8	"	"	--	"	78.2%	"	--	--	"	
Surrogate(s): 2-Fluorobiphenyl		*Recovery: 86.8%*			*Limits: 10-150%*	*"*							*08/12/09 11:00*	
p-Terphenyl-d14		*83.5%*			*10-150%*	*"*							*"*	

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Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

Percent Dry Weight (Solids) per ASTM D2216-80 - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9080279 **Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (9080279-DUP1)					**QC Source: PSH0216-03**				**Extracted: 08/07/09 18:07**					
% Solids	NCA SOP	75.8	---	0.0100	% by Weight	1x	75.5	--	--	--	0.397%	(20)	08/07/09 18:07	

TestAmerica Portland

Howard Holmes, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

Organic Carbon, Total (TOC) - Laboratory Quality Control Results

TestAmerica Connecticut

QC Batch: 30131 **Soil Preparation Method: NA**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (220-30131-5)				**QC Source:**					**Extracted: 08/14/09 23:22**					
Total Organic Carbon - Duplicates	9060	3976	10.4	100	mg/Kg	1x	--	3530	113%	(28-172)	--	--	08/14/09 23:22	
Blank (220-30131-6)				**QC Source:**					**Extracted: 08/14/09 23:29**					
Total Organic Carbon - Duplicates	9060	ND	10.4	100	mg/Kg	1x	--	--	--	--	--	--	08/14/09 23:29	
Matrix Spike (98365S)				**QC Source: PSH0214-05**					**Extracted: 08/15/09 01:39**					
Total Organic Carbon - Duplicates	9060	100900	10.4	100	mg/Kg	1x	10800	89500	101%	(75-125)	--	--	08/15/09 01:39	
Duplicate (98365X)				**QC Source: PSH0214-05**					**Extracted: 08/15/09 01:11**					
Total Organic Carbon - Duplicates	9060	10410	10.4	100	mg/Kg	1x	10800	--	--	--	4%	(20)	08/15/09 01:11	

TestAmerica Portland

Howard Holmes, Project Manager

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/19/09 22:47

Notes and Definitions

Report Specific Notes:

MNR	-	No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.
RL3	-	Reporting limit raised due to high concentrations of non-target analytes.
Z3	-	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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 Limits	-	Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
Electronic Signature	-	Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* 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

Howard Holmes, Project Manager

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210 X
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PSH0214

CLIENT: City of Portland

REPORT TO: Jennifer Shackelford
ADDRESS:

PHONE: FAX:

INVOICE TO: Charles Lytle

P.O. NUMBER: 36238

PROJECT NAME: Portland Harbor
PROJECT NUMBER: Inline Samp.
SAMPLED BY: PTB, JXB

TURNAROUND REQUEST
in Business Days *

Organic & Inorganic Analyses: X (STD.) | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 (STD.) | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

PRESERVATIVE

REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PAH + Phthalates	TOC	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	FO095788 ①	8/4/9 0954	X	X		1		
2	FO095789	8/4/9 1026	X	X		2		
3	FO095790	8/4/9 1149		X		1		
4	FO095791	8/4/9 1307		X		1		
5	FO095792	8/4/9 1348		X		1		
6	FO095793	8/5/9 1120		X		1		
7								
8								
9								
10								

RELEASED BY: Kristen Wright		DATE: 8/6/9	RECEIVED BY:		DATE: 8/6/9
PRINT NAME: Kristen Wright	FIRM: City of Portland	TIME: 14:20	PRINT NAME: Bob F	FIRM: TAP	TIME: 14:20
RELEASED BY:		DATE: 8/6/9	RECEIVED BY:		DATE: 8/6/09
PRINT NAME: Bob	FIRM: TAP	TIME: 17:55	PRINT NAME:	FIRM: TAP	TIME: 1755

ADDITIONAL REMARKS:
① limited sample, analyze for TOC first

TEMP: 0.6

PAGE OF

TAL-1000(0408)

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PSH0214 Date/Time Received: 8/6/09 1755

Client Name and Project: City of Portland Portland Harbor

Time Zone:
☐EDT/EST ☐CDT/CST ☐MDT/MST ☒PDT/PST ☐AK ☐OTHER

Unpacking Checks:

Cooler #(s): 1

Temperatures: 0.0

Digi #1 ☐ Digi #2 ☐ IR Gun ☒ (☐Plastic ☒Glass)

Temperature out of Range:

__Not enough or No Ice
__Ice Melted
__W/in 4 Hrs of collection
__Other:_____

Initials: BE

N/A	Yes	No	
☒	☐	☐	1. If ESI client, were temp blanks received? If no, document on NOD.
☒	☐	☐	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. Bottles received intact? If no, document on NOD.
	☒	☐	5. Sample is not multiphasic? If no, document on NOD.
	☒	☐	6. Proper Container and preservatives used? If no, document on NOD.
☒	☐	☐	7. pH of all samples checked and meet requirements? If no, document on NOD.
☒	☐	☐	8. Cyanide samples checked for sulfides and meet requirements? If no, notify PM.
☒	☐	☐	9. HF Dilution required?
	☒	☐	10. Sufficient volume provided for all analysis? If no, document on NOD and consult PM before proceeding.
	☒	☐	11. Did chain of custody agree with samples received? If no, document on NOD.
	☒	☐	12. Is the "Sampled by" section of the COC completed?
☒	☐	☐	13. Were VOA/Oil Syringe samples without headspace?
☒	☐	☐	14. Were VOA vials preserved? ☐HCl ☐Sodium Thiosulfate ☐Ascorbic Acid
	☐	☒	15. Did samples require preservation with sodium thiosulfate?
☒	☐	☐	16. If yes to #14, was the residual chlorine test negative? If no, document on NOD.
☒	☐	☐	17. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.
☒	☐	☐	18. Is sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM before proceeding.
☒	☐	☐	19. Are analyses with short holding times received in hold?
	☒	☐	20. Was Standard Turn Around (TAT) requested?
	☒	☐	21. Receipt date(s) < 48 hours past the collection date(s)? If no, notify PM.

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PSH0214

Login Checks:

Initials: [illegible]

N/A	Yes	No	
	☑	☐	22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM.
☑	☐	☐	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?
	☑	☐	26. Were tests logged checked against the COC?
☑	☐	☐	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:

Initials: [illegible]

N/A	Yes	No	
☐	☑	☐	31. Were the subcontracted samples/containers put in Sx fridge?
☑	☐	☐	32. Were sample bottles and COC double checked for dissolved/filtered metals?
	☑	☐	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).

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
(503) 823-5696

City of Portland Chain-of-Custody
Bureau of Environmental Services

Date: 11/10/2009
Page: 1 of 1
Collected By: PTB, ECH, JXB

Project Name: PORTLAND HARBOR INLINE SAMP
File Number: 1020.001 Matrix: SEDIMENT

OUTFALL 33 - 2nd Inline Sampling Event

Requested Analyses

WPCL Sample I.D.	Location	Point Code	Sample Date	Sample Time	Sample Type	Organics: PCB Aroclors - LL	Organics: PAH+Phthalates by TA	Organics	Organics	Organics	Organics	General: Total Solids	General	General	Metals: Total Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn)	Field Comments
FO096166	IL-33-AEE063-1109 CB IN SW CORNER OF SE 2ND & CLAY	33_8	11/10/09	1149	C	●	●					●			●	
FO096167	IL-33-ABU893-1109 120 SE MARKET ST	33_9	11/10/09	1119	C	●	●					●			●	
FO096168	IL-33-AEE059-1109 125 SE CLAY ST	33_10	11/10/09	1229	C	●	●					●			●	
FO096169	IL-33-ABU882-1109 120 SE CLAY ST	33_11	11/10/09	1320	C	●	●					●			●	
FO096170	IL-33-AEE055-1109 CB ON NE CORNER OF SE WATER & CLAY	33_12	11/10/09	1416	C	●	●					●			●	
FO096171	FIELD DECON BLANK	FDB	11/10/09	1400	G		●								●	

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.	Relinquished By: 4.
Signature: Peter Bryant Time: 1533	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Peter Bryant Date: 11/10/09	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Received By: 1.	**Received By: 2.**	**Received By: 3.**	**Received By: 4.**
Signature: Time: 1533	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Date: 11/10/09	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:

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: **FO096166** **Sample Collected:** 11/10/09 11:49 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-AEE063-1109
CB IN SW CORNER OF SE 2ND & CLAY
Sample Point Code: 33_8
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 2
System ID: AN10855
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/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	70.9	% W/W	0.01	SM 2540 G	11/12/09
METALS					
ARSENIC	4.67	mg/Kg dry wt	0.50	EPA 6020	11/18/09
CADMIUM	1.49	mg/Kg dry wt	0.10	EPA 6020	11/18/09
CHROMIUM	47.2	mg/Kg dry wt	0.50	EPA 6020	11/18/09
COPPER	182	mg/Kg dry wt	0.25	EPA 6020	11/18/09
LEAD	257	mg/Kg dry wt	0.10	EPA 6020	11/18/09
MERCURY	0.070	mg/Kg dry wt	0.010	EPA 6020	11/18/09
NICKEL	40.4	mg/Kg dry wt	0.25	EPA 6020	11/18/09
SILVER	0.27	mg/Kg dry wt	0.10	EPA 6020	11/18/09
ZINC	877	mg/Kg dry wt	0.50	EPA 6020	11/18/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	11/17/09
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1248	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1254	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1260	33	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
OUTSIDE ANALYSIS					
POLYNUCLEAR AROMATICS & PHTHALATES - TA					
Acenaphthene	<95.8	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Acenaphthylene	<95.8	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Anthracene	<95.8	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Benzo(a)anthracene	154	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Benzo(a)pyrene	195	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Benzo(b)fluoranthene	271	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Benzo(ghi)perylene	223	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Benzo(k)fluoranthene	140	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Bis(2-ethylhexyl) phthalate	5720	µg/Kg dry wt	766	EPA8270M-SIM	11/16/09
Butyl benzyl phthalate	985	µg/Kg dry wt	766	EPA8270M-SIM	11/16/09

Report Date: 12/04/09 **Validated By:**

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: **FO096166** **Sample Collected:** 11/10/09 11:49 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-AEE063-1109
CB IN SW CORNER OF SE 2ND & CLAY
Sample Point Code: 33_8
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 2 of 2
System ID: AN10855
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/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
Chrysene	275	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Dibenzo(a,h)anthracene	<95.8	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Diethyl phthalate	<766	µg/Kg dry wt	766	EPA8270M-SIM	11/16/09
Dimethyl phthalate	<766	µg/Kg dry wt	766	EPA8270M-SIM	11/16/09
Di-n-butyl phthalate	782	µg/Kg dry wt	766	EPA8270M-SIM	11/16/09
Di-n-octyl phthalate	<766	µg/Kg dry wt	766	EPA8270M-SIM	11/16/09
Fluoranthene	293	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Fluorene	<95.8	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Indeno(1,2,3-cd)pyrene	153	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Naphthalene	<95.8	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Phenanthrene	160	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09
Pyrene	256	µg/Kg dry wt	95.8	EPA8270M-SIM	11/16/09

End of Report for Sample ID: FO096166

Report Date: 12/04/09 **Validated By:**

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: **FO096167** **Sample Collected:** 11/10/09 11:19 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-ABU893-1109
120 SE MARKET ST
Sample Point Code: 33_9
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 2
System ID: AN10856
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/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	57.1	% W/W	0.01	SM 2540 G	11/12/09
METALS					
ARSENIC	4.39	mg/Kg dry wt	0.50	EPA 6020	11/18/09
CADMIUM	3.55	mg/Kg dry wt	0.10	EPA 6020	11/18/09
CHROMIUM	50.7	mg/Kg dry wt	0.50	EPA 6020	11/18/09
COPPER	165	mg/Kg dry wt	0.25	EPA 6020	11/18/09
LEAD	393	mg/Kg dry wt	0.10	EPA 6020	11/18/09
MERCURY	0.275	mg/Kg dry wt	0.010	EPA 6020	11/18/09
NICKEL	36.9	mg/Kg dry wt	0.25	EPA 6020	11/18/09
SILVER	0.32	mg/Kg dry wt	0.10	EPA 6020	11/18/09
ZINC	1170	mg/Kg dry wt	0.50	EPA 6020	11/18/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	11/17/09
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1248	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1254	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1260	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
OUTSIDE ANALYSIS					
POLYNUCLEAR AROMATICS & PHTHALATES - TA					
Acenaphthene	<122	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Acenaphthylene	<122	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Anthracene	<122	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Benzo(a)anthracene	367	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Benzo(a)pyrene	356	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Benzo(b)fluoranthene	588	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Benzo(ghi)perylene	431	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Benzo(k)fluoranthene	318	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Bis(2-ethylhexyl) phthalate	18600	µg/Kg dry wt	1220	EPA8270M-SIM	11/16/09
Butyl benzyl phthalate	<1220	µg/Kg dry wt	1220	EPA8270M-SIM	11/16/09

Report Date: 12/04/09 **Validated By:**

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: **FO096167** **Sample Collected:** 11/10/09 11:19 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-ABU893-1109
120 SE MARKET ST
Sample Point Code: 33_9
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 2 of 2
System ID: AN10856
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/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
Chrysene	683	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Dibenzo(a,h)anthracene	<122	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Diethyl phthalate	<1220	µg/Kg dry wt	1220	EPA8270M-SIM	11/16/09
Dimethyl phthalate	<1220	µg/Kg dry wt	1220	EPA8270M-SIM	11/16/09
Di-n-butyl phthalate	<1220	µg/Kg dry wt	1220	EPA8270M-SIM	11/16/09
Di-n-octyl phthalate	<1220	µg/Kg dry wt	1220	EPA8270M-SIM	11/16/09
Fluoranthene	2310	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Fluorene	<122	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Indeno(1,2,3-cd)pyrene	292	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Naphthalene	<122	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Phenanthrene	1140	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09
Pyrene	1280	µg/Kg dry wt	122	EPA8270M-SIM	11/16/09

End of Report for Sample ID: FO096167

Report Date: 12/04/09 **Validated By:**

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: **FO096168** **Sample Collected:** 11/10/09 12:29 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-AEE059-1109
125 SE CLAY ST
Sample Point Code: 33_10
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 2
System ID: AN10857
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/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	74.3	% W/W	0.01	SM 2540 G	11/12/09
METALS					
ARSENIC	1.88	mg/Kg dry wt	0.50	EPA 6020	11/18/09
CADMIUM	0.60	mg/Kg dry wt	0.10	EPA 6020	11/18/09
CHROMIUM	30.7	mg/Kg dry wt	0.50	EPA 6020	11/18/09
COPPER	86.9	mg/Kg dry wt	0.25	EPA 6020	11/18/09
LEAD	60.0	mg/Kg dry wt	0.10	EPA 6020	11/18/09
MERCURY	0.055	mg/Kg dry wt	0.010	EPA 6020	11/18/09
NICKEL	24.5	mg/Kg dry wt	0.25	EPA 6020	11/18/09
SILVER	<0.10	mg/Kg dry wt	0.10	EPA 6020	11/18/09
ZINC	408	mg/Kg dry wt	0.50	EPA 6020	11/18/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	11/17/09
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1248	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1254	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1260	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	11/17/09
OUTSIDE ANALYSIS					
POLYNUCLEAR AROMATICS & PHTHALATES - TA					
Acenaphthene	<87.3	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Acenaphthylene	<87.3	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Anthracene	<87.3	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Benzo(a)anthracene	<87.3	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Benzo(a)pyrene	98.9	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Benzo(b)fluoranthene	158	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Benzo(ghi)perylene	177	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Benzo(k)fluoranthene	<87.3	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Bis(2-ethylhexyl) phthalate	5720	µg/Kg dry wt	699	EPA8270M-SIM	11/16/09
Butyl benzyl phthalate	3320	µg/Kg dry wt	699	EPA8270M-SIM	11/16/09

Report Date: 12/04/09 **Validated By:**

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: **FO096168** **Sample Collected:** 11/10/09 12:29 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-AEE059-1109
125 SE CLAY ST
Sample Point Code: 33_10
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 2 of 2
System ID: AN10857
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/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
Chrysene	190	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Dibenzo(a,h)anthracene	<87.3	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Diethyl phthalate	<699	µg/Kg dry wt	699	EPA8270M-SIM	11/16/09
Dimethyl phthalate	<699	µg/Kg dry wt	699	EPA8270M-SIM	11/16/09
Di-n-butyl phthalate	<699	µg/Kg dry wt	699	EPA8270M-SIM	11/16/09
Di-n-octyl phthalate	<1050	µg/Kg dry wt	1050	EPA8270M-SIM	11/16/09
Fluoranthene	270	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Fluorene	<87.3	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Indeno(1,2,3-cd)pyrene	<87.3	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Naphthalene	<87.3	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Phenanthrene	307	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09
Pyrene	250	µg/Kg dry wt	87.3	EPA8270M-SIM	11/16/09

End of Report for Sample ID: FO096168

Report Date: 12/04/09 **Validated By:**

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: **FO096169** **Sample Collected:** 11/10/09 13:20 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-ABU882-1109
120 SE CLAY ST
Sample Point Code: 33_11
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 2
System ID: AN10858
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/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. LAB: Analysis for PCB detected a pattern that appears to be Aroclor 1260 but at a concentration less than the MRL.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	78.4	% W/W	0.01	SM 2540 G	11/12/09
METALS					
ARSENIC	2.27	mg/Kg dry wt	0.50	EPA 6020	11/18/09
CADMIUM	0.49	mg/Kg dry wt	0.10	EPA 6020	11/18/09
CHROMIUM	36.6	mg/Kg dry wt	0.50	EPA 6020	11/18/09
COPPER	64.9	mg/Kg dry wt	0.25	EPA 6020	11/18/09
LEAD	1400	mg/Kg dry wt	0.10	EPA 6020	11/18/09
MERCURY	0.118	mg/Kg dry wt	0.010	EPA 6020	11/18/09
NICKEL	21.5	mg/Kg dry wt	0.25	EPA 6020	11/18/09
SILVER	0.24	mg/Kg dry wt	0.10	EPA 6020	11/18/09
ZINC	266	mg/Kg dry wt	0.50	EPA 6020	11/18/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	11/24/09
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1248	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1254	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1260	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
OUTSIDE ANALYSIS					
POLYNUCLEAR AROMATICS & PHTHALATES - TA					
Acenaphthene	<34.5	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Acenaphthylene	<34.5	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Anthracene	<34.5	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Benzo(a)anthracene	147	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Benzo(a)pyrene	116	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Benzo(b)fluoranthene	123	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Benzo(ghi)perylene	78.3	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Benzo(k)fluoranthene	107	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Bis(2-ethylhexyl) phthalate	1670	µg/Kg dry wt	138	EPA8270M-SIM	11/16/09
Butyl benzyl phthalate	521	µg/Kg dry wt	138	EPA8270M-SIM	11/16/09

Report Date: 12/04/09 **Validated By:**

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: **FO096169** **Sample Collected:** 11/10/09 13:20 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-ABU882-1109
120 SE CLAY ST
Sample Point Code: 33_11
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 2 of 2
System ID: AN10858
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/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. LAB: Analysis for PCB detected a pattern that appears to be Aroclor 1260 but at a concentration less than the MRL.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Chrysene	191	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Dibenzo(a,h)anthracene	<34.5	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Diethyl phthalate	<138	µg/Kg dry wt	138	EPA8270M-SIM	11/16/09
Dimethyl phthalate	<138	µg/Kg dry wt	138	EPA8270M-SIM	11/16/09
Di-n-butyl phthalate	<138	µg/Kg dry wt	138	EPA8270M-SIM	11/16/09
Di-n-octyl phthalate	<689	µg/Kg dry wt	689	EPA8270M-SIM	11/16/09
Fluoranthene	401	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Fluorene	<34.5	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Indeno(1,2,3-cd)pyrene	61.7	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Naphthalene	94.6	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Phenanthrene	141	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09
Pyrene	310	µg/Kg dry wt	34.5	EPA8270M-SIM	11/16/09

End of Report for Sample ID: FO096169

Report Date: 12/04/09 **Validated By:**

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: **FO096170** **Sample Collected:** 11/10/09 14:16 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-AEE055-1109
CB ON NE CORNER OF SE WATER & CLAY
Sample Point Code: 33_12
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 2
System ID: AN10859
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/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	76.5	% W/W	0.01	SM 2540 G	11/12/09
METALS					
ARSENIC	7.53	mg/Kg dry wt	0.50	EPA 6020	11/18/09
CADMIUM	1.45	mg/Kg dry wt	0.10	EPA 6020	11/18/09
CHROMIUM	61.8	mg/Kg dry wt	0.50	EPA 6020	11/18/09
COPPER	189	mg/Kg dry wt	0.25	EPA 6020	11/18/09
LEAD	142	mg/Kg dry wt	0.10	EPA 6020	11/18/09
MERCURY	0.214	mg/Kg dry wt	0.010	EPA 6020	11/18/09
NICKEL	53.9	mg/Kg dry wt	0.25	EPA 6020	11/18/09
SILVER	0.79	mg/Kg dry wt	0.10	EPA 6020	11/18/09
ZINC	792	mg/Kg dry wt	0.50	EPA 6020	11/18/09
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	11/24/09
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1248	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1254	54	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1260	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	11/24/09
OUTSIDE ANALYSIS					
POLYNUCLEAR AROMATICS & PHTHALATES - TA					
Acenaphthene	<93.5	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Acenaphthylene	<93.5	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Anthracene	<93.5	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Benzo(a)anthracene	245	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Benzo(a)pyrene	322	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Benzo(b)fluoranthene	491	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Benzo(ghi)perylene	484	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Benzo(k)fluoranthene	260	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Bis(2-ethylhexyl) phthalate	3470	µg/Kg dry wt	748	EPA8270M-SIM	11/16/09
Butyl benzyl phthalate	<748	µg/Kg dry wt	748	EPA8270M-SIM	11/16/09

Report Date: 12/04/09 **Validated By:**

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: **FO096170** **Sample Collected:** 11/10/09 14:16 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-33-AEE055-1109
CB ON NE CORNER OF SE WATER & CLAY
Sample Point Code: 33_12
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 2 of 2
System ID: AN10859
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/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
Chrysene	481	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Dibenzo(a,h)anthracene	108	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Diethyl phthalate	<748	µg/Kg dry wt	748	EPA8270M-SIM	11/16/09
Dimethyl phthalate	<748	µg/Kg dry wt	748	EPA8270M-SIM	11/16/09
Di-n-butyl phthalate	<748	µg/Kg dry wt	748	EPA8270M-SIM	11/16/09
Di-n-octyl phthalate	<748	µg/Kg dry wt	748	EPA8270M-SIM	11/16/09
Fluoranthene	230	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Fluorene	<93.5	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Indeno(1,2,3-cd)pyrene	276	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Naphthalene	<93.5	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Phenanthrene	133	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09
Pyrene	234	µg/Kg dry wt	93.5	EPA8270M-SIM	11/16/09

End of Report for Sample ID: FO096170

Report Date: 12/04/09 **Validated By:**

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: **FO096171** **Sample Collected:** 11/10/09 14:00 **Sample Received:** 11/10/09 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: FIELD DECON BLANK

Report Page: Page 1 of 2

System ID: AN10860
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/JXB

Sample Point Code: FDBLANK
Sample Type: GRAB
Sample Matrix: DIWTR

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
METALS					
MERCURY	<0.0040	µg/L	0.004	WPCLSOP M-10.02	11/14/09
METALS BY ICP-MS (TOTAL) - 8					
ARSENIC	<0.045	µg/L	0.045	EPA 200.8	11/13/09
CADMIUM	<0.10	µg/L	0.1	EPA 200.8	11/13/09
CHROMIUM	<0.40	µg/L	0.4	EPA 200.8	11/13/09
COPPER	<0.20	µg/L	0.2	EPA 200.8	11/13/09
LEAD	<0.10	µg/L	0.1	EPA 200.8	11/13/09
NICKEL	<0.20	µg/L	0.2	EPA 200.8	11/13/09
SILVER	<0.10	µg/L	0.1	EPA 200.8	11/13/09
ZINC	<0.50	µg/L	0.5	EPA 200.8	11/13/09
OUTSIDE ANALYSIS					
POLYNUCLEAR AROMATICS & PHTHALATES - TA					
Acenaphthene	<0.0192	µg/L	0.0192	EPA 8270M-SIM	11/17/09
Acenaphthylene	<0.0192	µg/L	0.0192	EPA 8270M-SIM	11/17/09
Anthracene	<0.0192	µg/L	0.0192	EPA 8270M-SIM	11/17/09
Benzo(a)anthracene	<0.00962	µg/L	0.00962	EPA 8270M-SIM	11/17/09
Benzo(a)pyrene	<0.00962	µg/L	0.00962	EPA 8270M-SIM	11/17/09
Benzo(b)fluoranthene	<0.00962	µg/L	0.00962	EPA 8270M-SIM	11/17/09
Benzo(ghi)perylene	<0.0192	µg/L	0.0192	EPA 8270M-SIM	11/17/09
Benzo(k)fluoranthene	<0.00962	µg/L	0.00962	EPA 8270M-SIM	11/17/09
Bis(2-ethylhexyl) phthalate	<0.962	µg/L	0.962	EPA 8270M-SIM	11/17/09
Butyl benzyl phthalate	<0.962	µg/L	0.962	EPA 8270M-SIM	11/17/09
Chrysene	<0.00962	µg/L	0.00962	EPA 8270M-SIM	11/17/09
Dibenzo(a,h)anthracene	<0.00962	µg/L	0.00962	EPA 8270M-SIM	11/17/09
Diethyl phthalate	<0.962	µg/L	0.962	EPA 8270M-SIM	11/17/09
Dimethyl phthalate	<0.962	µg/L	0.962	EPA 8270M-SIM	11/17/09
Di-n-butyl phthalate	<0.962	µg/L	0.962	EPA 8270M-SIM	11/17/09
Di-n-octyl phthalate	<0.962	µg/L	0.962	EPA 8270M-SIM	11/17/09
Fluoranthene	<0.0192	µg/L	0.0192	EPA 8270M-SIM	11/17/09
Fluorene	<0.0192	µg/L	0.0192	EPA 8270M-SIM	11/17/09
Indeno(1,2,3-cd)pyrene	<0.00962	µg/L	0.00962	EPA 8270M-SIM	11/17/09
Naphthalene	<0.0192	µg/L	0.0192	EPA 8270M-SIM	11/17/09
Phenanthrene	<0.0192	µg/L	0.0192	EPA 8270M-SIM	11/17/09
Pyrene	<0.0192	µg/L	0.0192	EPA 8270M-SIM	11/17/09

Report Date: 12/04/09 **Validated By:**

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: **FO096171**

Sample Collected: 11/10/09 14:00
Sample Received: 11/10/09

Sample Status: COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: FIELD DECON BLANK

Report Page: Page 2 of 2

System ID: AN10860
EID File # : 1020.001
LocCode: PORTHARI
Collected By: PTB/ECH/JXB

Sample Point Code: FDBLANK
Sample Type: GRAB
Sample Matrix: DIWTR

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

End of Report for Sample ID: FO096171

Report Date: 12/04/09

Validated By:

2009 Camera Survey of City Outfall 33

METRO ROOTER & PLUMBING SERVICES

Observation Report with Still Images

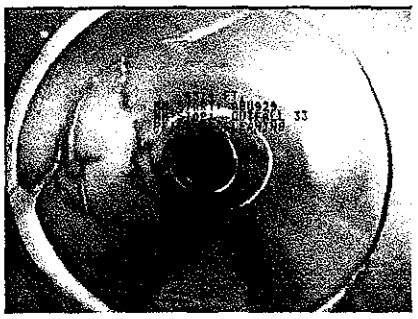
Main Asset ID:	Project Name:	Inspection Date:	Weather:	Operator:
ABU929/OUTFALL33	COP 1515 WATER AVE	11/4/2009 8:37:25 AM	Dry	JAMES STEPHENSON

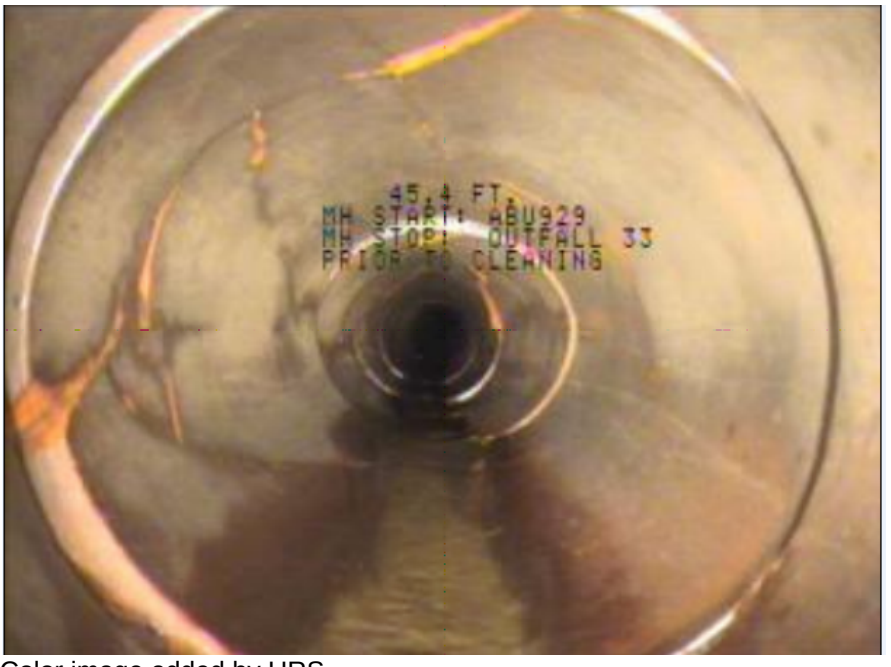
Upstream Node:	Downstream Node:	Main Length:
ABU929	OUTFALL 33	450.0

Comments:
PRIOR TO CLEANING

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
0.0		START DS	No	/		
9.2		LATABANDONED	No	2 /		
12.2		LATABANDONED	No	10 /		
12.2		Broken pipe	No	/		MULTIPLE FRACTURES
45.4		Broken pipe	No	/		MULTIPLE FRACTURES

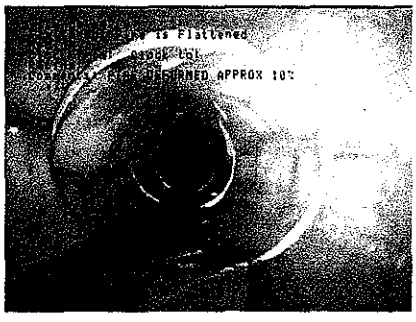




Color image added by URS

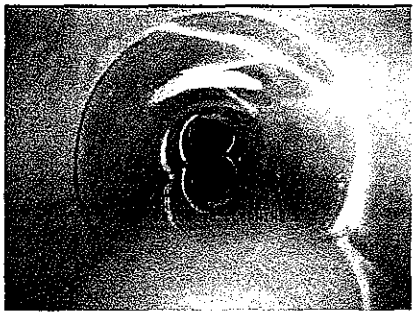
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
47.9		Flattened	No	/	Medium	PIPE DEFORMED APPROX 10%



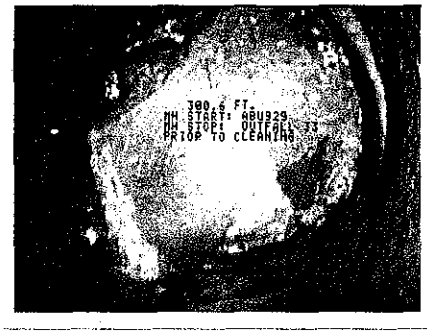
Color image added by URS

115.6	LAT	No	1 /		TAP



Color image added by URS

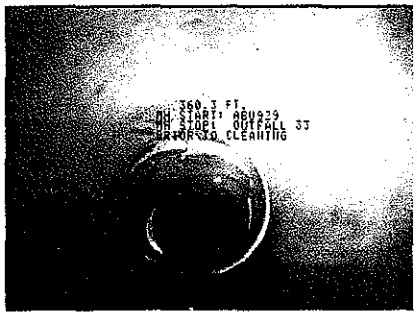
124.7	Broken pipe	No	12 /	
126.9	LAT	No	12 /	TAP
133.7	LATINTRUDING	No	1 /	INTRUDES 2" + LARGE BORE
264.4	Broken pipe	No	/	MULTIPLE FRACTURES

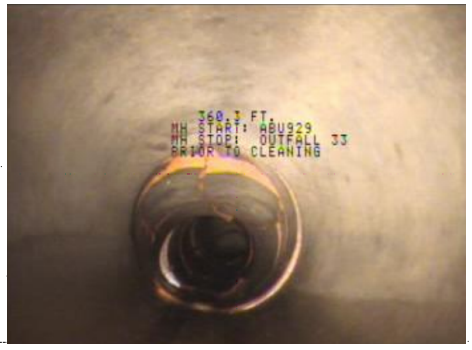


Color image added by URS

Observations

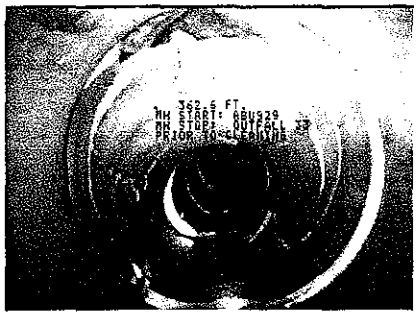
Distance	Length	Code	Reversed	Clock Pos	Severity	Comment
300.6		LATABANDONED	No	2 /		PLUGGED WITH CONC RUBBLE

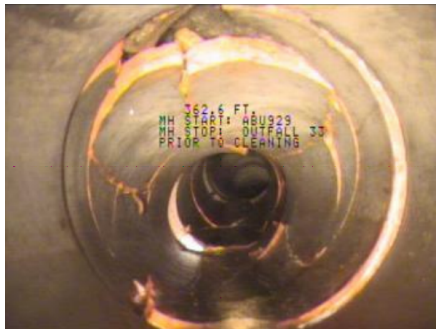




Color image added by URS

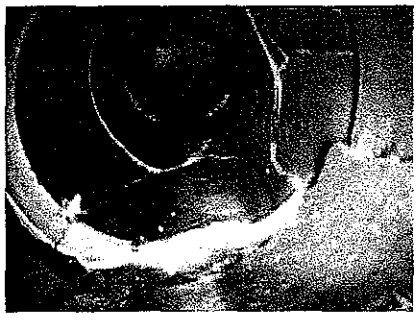
360.3		Bend	No	/		GRADE BREAK DOWN





Color image added by URS

363.0		Broken pipe	No	/		MULTIPLE FRACTURES PIPE DEFORMED 20% +



Color image added by URS

367.4		Joint Offset	No	/	Medium	OFFSET JOINT 1.5"
367.4		Joint Offset	No	/		UNABLE TO PASS APPROX 2' AHEAD PIPE CHGS TO CONC POSS GRADE INCREASES DOWN
367.5		STOP	No	/		

Table H-1. Relevant Water Well Logs - Oregon Water Resources Department's (WRD) Well Log Query System

Well Number	Type	Total Depth	Completed Date	Owner Name	Street Address of Well	Location from Project Area	Section	Large 1/4	Small 1/4
4	Industrial	60	3/13/1990	(b) (6)	120 SE Clay	Within Area of Interest	2	SW	NW
1080	Industrial	145	2/28/1927	NW Ice and Cold Storage Co.	68 SE Washington Street	Cross gradient; 2375 feet to N-NE	34	SE	NE
2716	Industrial	265	6/1/1928	NW Ice and Cold Storage Co.	68 SE Washington Street	Cross gradient; 2375 feet to N-NE	3	NE	NE
2718	Industrial	265	12/31/1928	NW Ice and Cold Storage Co.	68 SE Washington Street	Cross gradient; 2375 feet to N-NE	3	NE	-
2721	Industrial	235	12/31/1912	NW Ice and Cold Storage Co.	68 SE Washington Street	Cross gradient; 2375 feet to N-NE	3	-	-
1086	Industrial	271	1/26/1959	Lloyd Corporation	-	Cross gradient; > 1 mile to N	35	NW	NE
2713	Industrial	504	-	Western Dairy Products Co.	-	Up gradient; 2500 to E-NE	2	NW	SW
2770	Industrial	490	1/31/1946	Dairy Cooperative Association	-	Cross gradient; > 1 mile to SE	11	SE	-
2781	Industrial	490	12/31/1946	Dairy Cooperative Association	-	Cross gradient; 1000 feet to SE	11	NW	NW
1085	Industrial	263	-	Corvallis Creamery	-	Cross gradient; 2500 feet to N-NE	34	SE	SE
2714	Industrial	385	12/31/1944	Arden Farms Co.	617 SE Main Street	Up gradient; 1000 feet to E-NE	2	NW	SW
2727	Industrial	307	12/31/1944	Arden Farms Co.	617 SE Main Street	Up gradient; 1000 feet to E-NE	2	NW	SW
2715	Industrial	105	11/21/1956	Lewis Brothers	1005 SE Washington Street	Up gradient; 3500 feet to E-NE	2	NW	-
2717	Industrial	180	9/27/1960	Eastside Plating Works	310 SE Stephens Street	Up gradient; < 500 feet to E	3	SE	NE
2778	Industrial	153	3/13/1967	Irwin-Hodson Company	2838 SE 9th Avenue	Cross gradient; 2000 feet to SE	11	-	-
2771	Industrial	330	12/31/1929	Libby, McNeill and Libby	-	Cross gradient; unknown ~ 2500 to SE	11	SE	NE
2772	Industrial	330	12/31/1929	Libby, McNeill and Libby	-	Cross gradient; unknown ~ 2500 to SE	11	NE	SE
2780	Industrial	40	-	Southern Pacific Railroad	5424 SE McLoughlin Boulevard	Cross gradient; > 1 mile to SE	11	-	-
1089	Industrial	380	8/8/1956	Jantzen Inc.	NE Glisan St & NE 20th Avenue	Cross gradient; < 1 mile to N-NE	35	NE	SE
1092	Industrial	272	12/3/1957	Sheraton Hotel Corporation	720 NE 12TH Avenue	Cross gradient; < 1 mile to N-NE	35	NW	NE
1090	Industrial	271	1/26/1959	Sheraton Hotel Corporation	720 NE 12TH Avenue	Cross gradient; < 1 mile to N-NE	35	NW	NE
1091	Irrigation	501	12/31/1931	Lloyd Corporation	-	Cross gradient; > 1 mile to N	35	NE	NW
2711	Other Use	212	1/15/1965	Pacific Northwest Bell	-	Up gradient; ~ 3,000 to E-NE	2	NE	NW
1087	Other Use	182	8/1/1960	Jantzen Inc.	411 NE 19th Avenue	Cross gradient; > 1 mile to NE	35	SE	NW
1088	Other Use	90	6/10/1961	Tonkin Motor Company	334 SE Grand Avenue	Cross gradient; 3000 feet to N	35	SW	SW

RECEIVED

APR 10 1990

WATER RESOURCES DEPT.

MULT 004

1S/1E/2cb

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

(START CARD) # 16256

(1) OWNER:

Well Number: ALEM [illegible]

Name (b) (6)

Address 120 SE CLAY

City PORTLAND State OR Zip 97214

(2) TYPE OF WORK:

☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☑ Cable

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☑ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☐ Depth of Completed Well 60 ft.

Explosives used Yes ☐ No ☐ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks ~~pounds~~
10+	1	25	GRANULAR BENTONITE			22
6	25	60				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☑ Other GRANULAR BENTONITE METHOD

Backfill placed from ft. to ft. Material

Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6	0	60	.25	☑	☐	☑	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method

☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☑ Pump ☑ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
42	5'	BAILER	1 hr.
37	4'	PUMP	2 HR

Temperature of water Depth Artesian Flow Found

Was a water analysis done? ☐ Yes By whom

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other

Depth of strata:

(9) LOCATION OF WELL by legal description:

County MULTNOMAH Latitude ' " Longitude ' "

Township 1S N or S, Range 1E E or W, WM.

Section 2 NW ¼ SW ¼

Tax Lot Lot Block Subdivision

Street Address of Well (or nearest address) SAME

(10) STATIC WATER LEVEL:

28 ft. below land surface. Date 13 MAR

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 31

From	To	Estimated Flow Rate	SWL
31	34		30
45	60		28

(12) WELL LOG:

Ground elevation

Material	From	To	SWL
ASPHALT & CEMENT	1	2	
SAND	2	7	
CEMENTED GRAVEL BROWN	7	20	
SILT BROWN	20	31	
GRAVEL w/ FINE SAND	31	34	
SAND w/ CLAY CHUNKS BROWN	34	45	
GRAVEL / SAND BROWN	45	60	

Date started 9 MAR Completed 13 MAR 90

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, abandonment of this well is in compliance with Oregon well constructi standards. Materials used and information reported above are true to my be knowledge and belief.

WWC Number

Signed Date

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonme work performed on this well during the construction dates reported above. work performed during this time is in compliance with Oregon w construction standards. This report is true to the best of my knowledge a belief.

WWC Number 743

Signed Richard Buck Date 3/13/90

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C

MULT 1080

File Original and First Copy with the STATE ENGINEER, SALEM, OREGON

Record from U.S.G.S. W.S.P. 890

WATER WELL REPORT
STATE OF OREGON

State Well No. 1N/1-34J 1

State Permit No.

(1) OWNER:

Name Northwestern Ice & Cold Storage Co.

Address 68 SE Washington
Portland, Oregon

(2) LOCATION OF WELL:

County Multnomah Owner's number, if any—

NE ¼ SE ¼ Section 34 T. 1 N R. 1 E W.M.

Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):

New Well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☐

8" Diam. from 0 ft. to 125 ft. Gage
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☐ Yes ☐ No

Type of perforator used

SIZE of perforations in. by in.

perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS: Well screen installed ☒ Yes ☐ No

Manufacturer's Name Strainer

Type Model No.

Diam. 6" Slot size Set from 125 ft. to 145 ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Was well gravel packed? ☐ Yes ☐ No Size of gravel:

Gravel placed from ft. to ft.

Was a surface seal provided? ☐ Yes ☐ No To what depth? ft.

Material used in seal—

Did any strata contain unusable water? ☐ Yes ☐ No

Type of water? Depth of strata

Method of sealing strata off

(10) WATER LEVELS:

Static level 63 ft. below land surface Date Feb. 1927

Artesian pressure lbs. per square inch Date

Log Accepted by:

[Signed] (Owner) Date , 19

(11) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: 80 gal./min. with 20 ft. drawdown after hrs.
" 118 " 36 " "
" " " "

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(12) WELL LOG: Diameter of well 8 inches.

Depth drilled 145 ft. Depth of completed well 145 ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
unknown	0	112
sand and gravel	112	145

Work started 19 , Completed 19 27

(13) PUMP:

Manufacturer's Name

Type: H.P.

Well Driller's Statement:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME (Person, firm, or corporation) (Type or print)

Address

Driller's well number

[Signed] (Well Driller)

License No. Date , 19

(USE ADDITIONAL SHEETS IF NECESSARY)

File Original and First Copy with the STATE ENGINEER, SALEM, OREGON

Record from U.S.G.S. W.S.P 890

WATER WELL REPORT
STATE OF OREGON

MULT 1085

State Well No. 1N/1-34R( )

State Permit No.

(1) OWNER:
Name Corvallis Creamery

Address Portland, Oregon

(2) LOCATION OF WELL:
County Multnomah Owner's number, if any—

SE ¼ SE ¼ Section 34 T. 1 N R. 1 E W.M.

Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):
New Well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:
Rotary ☐ Driven ☐

Cable ☐ Jetted ☐

Dug ☐ Bored ☐

(6) CASING INSTALLED:
Threaded ☐ Welded ☐

12" Diam. from ft. to ft. Gage

10" Diam. from ft. to 263 ft. Gage

" Diam. from ft. to ft. Gage

(7) PERFORATIONS:
Perforated? ☒ Yes ☐ No

Type of perforator used data unknown

SIZE of perforations in. by in.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

(8) SCREENS:
Well screen installed ☐ Yes ☐ No

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Was well gravel packed? ☐ Yes ☐ No Size of gravel:

Gravel placed from ft. to ft.

Was a surface seal provided? ☐ Yes ☐ No To what depth? ft.

Material used in seal—

Did any strata contain unusable water? ☐ Yes ☐ No

Type of water? Depth of strata

Method of sealing strata off

(10) WATER LEVELS:
Static level ft. below land surface Date

Artesian pressure lbs. per square inch Date

Log Accepted by:

[Signed] (Owner) Date , 19

(11) WELL TESTS:
Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: 65 gal./min. with ft. drawdown after hrs.

" " " "

" " " "

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(12) WELL LOG:
Diameter of well 12-10 inches.

Depth drilled 263 ft. Depth of completed well ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
clay	0	25
sand and gravel, cemented, upper part water bearing	25	35
gravel, cemented	35	54
sand and gravel water bearing	54	57
gravel, cemented	57	120
gravel, loosely cemented water bearing	120	130
gravel, cemented, interstratified with clay	130	160
clay and gravel, water bearing in part	160	172
shale, blue and brown, lower part sandy	172	211
gravel, cemented	211	216
shale, blue, sandy, cemented sand	216	254
gravel, cemented	254	263

Work started 19 . Completed 19

(13) PUMP:
Manufacturer's Name

Type: Turbine H.P.

Well Driller's Statement:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME O. E. Jannsen Drilling Co.
(Person, firm, or corporation) (Type or print)

Address

Driller's well number

[Signed] (Well Driller)

License No. Date , 19..

(USE ADDITIONAL SHEETS IF NECESSARY)

ORIGINAL
File Original and Duplicate with the STATE ENGINEER, SALEM, OREGON

MULT 1036

WATER WELL REPORT
STATE OF OREGON

State Well No. W/1-35C 2
State Permit No. G-1144

(1) OWNER:
Name Lloyd Corporation
Address 720 NE 12th Ave
Portland, Oregon

(2) LOCATION OF WELL:
County Multnomah Owner's number, if any—
NE ¼ NW ¼ Section 35 T. 1N R. 1E W.M.
Bearing and distance from section or subdivision corner
235 ft. N., 90 ft. E of SW Corner,
Block 112, Holladay's Addition

(3) TYPE OF WORK (check):
Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
Abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☒
16" Diam. from 0 ft. to 271 ft. Gage 3/8" wall
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☒ Yes ☐ No
Type of perforator used Star
SIZE of perforations 3/8" in. by 1¼ in.
8 rows perforations from 186 ft. to 200 ft.
8 rows perforations from 242 ft. to 251 ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS: Well screen installed ☐ Yes ☒ No
Manufacturer's Name
Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Was well gravel packed? ☐ Yes ☐ No Size of gravel:
Gravel placed from ft. to ft.
Was a surface seal provided? ☐ Yes ☒ No To what depth? ft.
Material used in seal—
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 121 ft. below land surface Date Jan. 26, 59
Artesian pressure lbs. per square inch Date

Log Accepted by:
[Signed] Lloyd Corporation Ltd (Owner) Date 3/1, 1959
G. F. B. Drinker
Port. Negr.

(11) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? Strasser D Co.
Yield: 1100 gal./min. with 7 ft. drawdown after 8 hrs.
" " " "
" " " "
Bailer test 150 gal./min. with no ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 53½ Was a chemical analysis made? ☒ Yes ☐ No

(12) WELL LOG: Diameter of well 16 inches.
Depth drilled 271 ft. Depth of completed well 271 ft.
Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Basement	Surface	14
Sandy silt	14	48
Coarse sand and gravel, some clay	48	67
Dirty sand	67	83
Dirty sand and gravel	83	117
Boulders, gravel, and sand	117	134
Loose gravel and sand	134	149
Gravel and sand, some large gravel	149	176
Gravel, some sand and clay	176	182
Loose gravel and sand, water bearing	182	201
Boulders	201	206
Sand, gravel, some clay boulders	206	242
Loose gravel and sand, water bearing	242	254
Cemented gravel	254	271

Work started Dec. 16 1958 Completed Feb. 11 1959

(13) PUMP:
Manufacturer's Name
Type: H.P.

Well Driller's Statement:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME R. J. Strasser Drilling Co. (Person, firm, or corporation) (Type or print)
Address 8110 SE Sunset Lane, Portland 6, Oregon
Driller's well number 3098
[Signed] Robert L. Strasser (Well Driller) partner
License No. 10 Date Feb. 20, 1959

(USE ADDITIONAL SHEETS IF NECESSARY)

RECEIVED
MAY 25 1961
STATE ENGINEER
SALEM, OREGON

File Original and First Copy with the STATE ENGINEER, SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON

MULT 1087 G-1691

State Well No. IN/1E-35K1

State Permit No. G-1551

(1) OWNER:

Name Jantzen, Inc.

Address 411 N. E. 19th Ave.

(2) LOCATION OF WELL:

County Multnomah Owner's number, if any—

N.W. ¼ S. E. ¼ Section 35 T. I.N. R. I. E. W.M.

Bearing and distance from section or subdivision corner North 2307' & East 137' from the S. W. Corner of Timothy Sullivan D.L.C.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☒

(5) TYPE OF WELL:

Rotary ☐ Driven ☐

Cable ☒ Jetted ☐

Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☒

12" Diam. from survace ft. to 182 ft. Gage 43.77

" Diam. from ft. to ft. Gage

" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☒ Yes ☐ No

Type of perforator used Star

SIZE of perforations 3/8 in. by 1¼ in.

600 perforations from 163 ft. to 173 ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

(8) SCREENS: Well screen installed ☐ Yes ☒ No

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

Was a surface seal provided? ☒ Yes ☐ No To what depth? 52 ft.

Material used in seal— cement grout

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? Depth of strata

Method of sealing strata off

(10) WATER LEVELS:

Static level 123 ft. below land surface Date Aug. 1, 1960

Artesian pressure lbs. per square inch Date

Log Accepted by

[Signed] Jantzen Inc. (Owner) Date Aug. 16, 1960

By: Ralph E. Johnston

(11) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom?

Yield:	500	gal./min. with	24	ft. drawdown after	45	hrs.
"	600	"	33	"	45	"
"	650	"	39	"	45	"

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m. Date

Temperature of water 55° Was a chemical analysis made? ☐ Yes ☐ No

(12) WELL LOG: Diameter of well 12 inches.

Depth drilled 182 ft. Depth of completed well 182 ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
(Sidewalk pit 9 ft.)		
Brown sand and silt	9	37
Yellow clay and sand	37	60
Yellow clay and gravel	60	79
Cemented gravel	79	90
Yellow clay and sand	90	117
Cemented gravel	117	158
Water bearing sand and gravel	158	172
Packed sand and gravel	172	182

Work started July 5 1960 Completed Aug. 8 1960

(13) PUMP:

Manufacturer's Name

Type: H.P.

Well Driller's Statement:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. J. STRASSER DRILLING CO. (Person, firm, or corporation) (Type or print)

Address 8110 S. E. Sunset Lane, Portland 6

Driller's well number 4024

[Signed] Robert L. Strasser (Well Driller)

License No. 10 Date August 15, 1960

(USE ADDITIONAL SHEETS IF NECESSARY)

ORIGINAL
File Original and Duplicate with the STATE ENGINEER, SALEM, OREGON

RECEIVED JUL 19 1961 STATE ENGINEER SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON

MULT

State Well No. 1N/1-35N

State Permit No. .....

1088

(1) OWNER:
Name Tonkin Motor Co.
Address 334 S. E. Grand Ave.
Portland, Oregon

(2) LOCATION OF WELL:
County Mult. Owner's number, if any—
SW ¼ SW ¼ Section 35 T. 1N R. 1 E W.M.
Bearing and distance from section or subdivision corner
295 Ft. N. and 360 ft. East of SW corner of SW ¼

(3) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☒

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☒
8" Diam. from 0 ft. to 90 ft. Gage std.
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☐ Yes ☐ No
Type of perforator used Star
SIZE of perforations 3/8 in. by 1¼ in.
210 perforations from 42 ft. to 49 ft.
180 perforations from 52 ft. to 58 ft.
270 perforations from 71 ft. to 80 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS: Well screen installed ☐ Yes ☐ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Was well gravel packed? ☒ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.
Was a surface seal provided? ☒ Yes ☐ No To what depth? 20 ft.
Material used in seal—
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 28 ft. below land surface Date 6/10/61
Artesian pressure lbs. per square inch Date

Log Accepted by:
[Signed] [illegible] (Owner) Date 7/18, 19 61

(11) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? Drilling Co.
Yield: 85 gal./min. with 35 ft. drawdown after 4 hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 57° Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG: Diameter of well 8 inches.
Depth drilled 90 ft. Depth of completed well 90 ft.
Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Top soil	0	6
Rock fill	6	19
Coarse sand and silt	19	37
Cemented gravel	37	42
Sand and gravel (some water)	42	51
Small gravel	51	70
Sand and gravel (water bearing	70	81
Sand, gravel and clay	81	90

Work started May 24 19 61 Completed June 10 1961

(13) PUMP:
Manufacturer's Name
Type: H.P.

Well Driller's Statement:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R.J. Strasser Drilling Co. (Person, firm, or corporation) (Type or print)
Address 8110 S. E. Sunset Lane, Portland 6, Ore.
Driller's well number
[Signed] Paul O Rydman mgr. (Well Driller)
License No. 10 Date July 17, 1961

(USE ADDITIONAL SHEETS IF NECESSARY)

ORIGINAL File Original, and Duplicate with the STATE ENGINEER, SALEM, OREGON

SEP 5 1956 STATE ENGINEER SALEM, OREGON

WATER WELL DRILLERS REPORT
STATE OF OREGON

MULT 1089

Do Not Fill In — State Well No. 1N/1-35 H(1) State Permit No. G213

(1) OWNER:
Name Jantzen Inc.

Address Jantzen Center-Portland 8, Oregon

(2) LOCATION OF WELL: App G320
County Multnomah Owner's number, if any—

R. F. D. or Street No.

Bearing and distance from section or subdivision corner

Well located under sidewalk on SE Glisan st. between 19th and 20th Ave.

(3) TYPE OF WORK (check):
New well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic [ ] Industrial [X] Municipal [ ]

Irrigation [ ] Test Well [ ] Other [ ]

(5) EQUIPMENT:
Rotary [ ]

Cable [X]

Dug Well [ ]

(6) CASING INSTALLED:
Threaded [ ] Welded [X]

FROM	ft. to		ft.	Diam.	Gage or Wall
Sidewlak'	307		12"	0.33"	
"	"		"	"	"
"	"		"	"	"
"	"		"	"	"
"	"		"	"	"
"	"		"	"	"

Type and size of shoe or well ring Std.

Describe joint

If gravel packed

Diameter of Bore	from ft.	to ft.
	"	"
	"	"
	"	"
	"	"
	"	"

Size of gravel:

(7) PERFORATIONS:
Type of perforator used Star perforator

SIZE of perforations $1\frac{1}{4}$ in., length, by 3/8 in.

FROM	to	ft.	perf per foot	No. of rows
150	172.5	ft.	4	
"	"	"	" " "	" " "
"	"	"	" " "	" " "
"	"	"	" " "	" " "
"	"	"	" " "	" " "

SCREENS:
Give Manufacturer's Name, Model No. and Size

(8) CONSTRUCTION:
Was a surface sanitary seal provided? [X] Yes [ ] No To what depth 30 ft.

Were any strata sealed against pollution? [ ] Yes [ ] No

If yes, note depth of strata

FROM	ft. to	ft.
"	"	"

METHOD OF SEALING backfilled with cuttings

(9) WATER LEVELS:
Depth at which water was first found	156	ft.
Standing level before perforating	111	ft.
Standing level after perforating	115	ft.

Log Accepted by:

[Signed] ..... Dated ....., 19.....
Owner

(10) WELL TESTS:
Was a pump test made? [X] Yes [ ] No If yes, by whom?

Yield:	400	gal./min. with	10	ft. draw down after	12	hrs.
"	750	"	20	"	"	"
"	950	"	26	"	12	"

Artesian flow ..... g.p.m.

Shut-in pressure ..... lbs. per square inch.

Bailer test ..... g.p.m. with ..... ft. drawdown

Temperature of water Was a chemical analysis made? [ ] Yes [ ] No

Was electric log made of well? [ ] Yes [ ] No

(11) WELL LOG:
Diameter of well, 12 inches.

Total depth 380 ft. Depth of completed well ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

sdwk to	basement	13 feet
13"	40"	Brown sand and silt
40"	48"	Blue clay
48"	59"	Yellow clay
59"	78"	Gravel with clay binder
78"	102"	Hard packed sand
102"	121"	Sand with clay binder
121"	156"	Cemented gravel -boulders
156"	171"	Water bearing sand and gravel
171"	195"	Cemented gravel and boulders
195"	206"	Sand and gravel-clay binder
206"	295"	Blue clay
295"	302"	Sandstone
302"	342"	Grey shale
342"	368"	Grey shale with sand seams
368"	380"	Sandstone

Ground elevation at well site ..... feet above mean sea level.

Work started June 23 1956 Completed Aug. 8 1956

Well Driller's Statement:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. J. Strasser Drilling Co.
(Person, firm, or corporation) (Typed or printed)

Address 8110 SE Sunset Lane Portland 6, Oregon

Driller's well number 3080

[Signed] R J Strasser
(Well Driller)

License No. 10 Dated Aug. 18, 1956

ORIGINAL
File Original and Duplicate with the STATE ENGINEER, SALEM, OREGON

RECEIVED FEB 24 1959 STATE ENGINEER SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON

MULT State Well No. 1N/1-35C(2)

G1322 State Permit No. G1144

1090

(1) OWNER:

Name: Sheraton Hotel Corporation

Address: 470 Atlantic Avenue, Boston, Massachusetts

(2) LOCATION OF WELL:

County: Multnomah Owner's number, if any—

NE ¼ NW ¼ Section 35 T. 1 N R. 1 E W.M.

Bearing and distance from section or subdivision corner: 253 ft. N., 90 ft. E of S. W. Corner, Block 112, Holladay's Addition

(3) TYPE OF WORK (check):

New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic [ ] Industrial [X] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(5) TYPE OF WELL:

Rotary [ ] Driven [ ]
Cable [X] Jetted [ ]
Dug [ ] Bored [ ]

(6) CASING INSTALLED: Threaded [ ] Welded [ ]

16" Diam. from 0 ft. to 271 ft. Gage 3/8 wall

" Diam. from ft. to ft. Gage

" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? [X] Yes [ ] No

Type of perforator used: Star

SIZE of perforations 3/8 in. by 1¼ in.

8 rows perforations from 186 ft. to 200 ft.

8 rows perforations from 242 ft. to 251 ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

(8) SCREENS: Well screen installed [ ] Yes [X] No

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Was well gravel packed? [ ] Yes [X] No Size of gravel:

Gravel placed from ft. to ft.

Was a surface seal provided? [ ] Yes [X] No To what depth? ft.

Material used in seal—

Did any strata contain unusable water? [ ] Yes [X] No

Type of water? Depth of strata

Method of sealing strata off

(10) WATER LEVELS:

Static level 121 ft. below land surface Date Jan. 26, 1959

Artesian pressure lbs. per square inch Date

Log Accepted by:

[Signed] (Owner) Date, 19

(11) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? [X] Yes [ ] No If yes, by whom?

Yield: 1100 gal./min. with 7 ft. drawdown after 8 hrs.

" " " "

" " " "

Bailer test 150 gal./min. with no ft. drawdown after hrs.

Artesian flow g.p.m. Date

Temperature of water 53½ Was a chemical analysis made? [X] Yes [ ] No

(12) WELL LOG: Diameter of well inches.

Depth drilled ft. Depth of completed well ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Basement	Surface	14
Sandy silt	14	48
Coarse sand and gravel, some clay	48	67
Dirty sand	67	83
Dirty sand and gravel	83	117
Boulders, gravel and sand	117	134
Loose gravel and sand	134	149
Gravel and sand, some large gravel	149	176
Gravel, some sand and clay	176	182
Loose sand and gravel, water bearing	182	201
Boulders	201	206
Sand, gravel, boulders, some clay	206	242
Loose sand and gravel, water bearing	242	254
Cemented gravel	254	271

Work started Dec. 16 19 58 Completed Feb. 11 19 59

(13) PUMP:

Manufacturer's Name

Type: H.P.

Well Driller's Statement:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. J. Strasser Drilling Co. (Person, firm, or corporation) (Type or print)

Address 8110 S. E. Sunset Lane, Portland, Ore.

Driller's well number 3098

[Signed] Robert L. Strasser, partner (Well Driller)

License No. 10 Date February 20 19 59

(USE ADDITIONAL SHEETS IF NECESSARY)

MULT 1091

File Original and First Copy with the STATE ENGINEER, SALEM, OREGON

Record from U.S.G.S. W.S.P. 890

WATER WELL REPORT
STATE OF OREGON

State Well No. 1N/1-35B(1)

State Permit No.

(1) OWNER:

Name Lloyd Corporation

Address Portland, Oregon

(2) LOCATION OF WELL:

County Multnomah Owner's number, if any—

NW ¼ NE ¼ Section 35 T. 1 N R. 1 E W.M.

Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):

New Well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐

Irrigation ☒ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐

Cable ☐ Jetted ☐

Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☐

" Diam. from ft. to ft. Gage

" Diam. from ft. to ft. Gage

" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☐ Yes ☐ No

Type of perforator used

SIZE of perforations in. by in.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

(8) SCREENS: Well screen installed ☐ Yes ☐ No

Manufacturer's Name

Type Model No.

Slot size Set from ft. to ft.

Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Was well gravel packed? ☐ Yes ☐ No Size of gravel:

Gravel placed from ft. to ft.

Was a surface seal provided? ☐ Yes ☐ No To what depth? ft.

Material used in seal—

Did any strata contain unusable water? ☐ Yes ☐ No

Type of water? Depth of strata

Method of sealing strata off

(10) WATER LEVELS:

Static level 30 ft. below land surface Date 1931

Artesian pressure lbs. per square inch Date

Log Accepted by:

[Signed] (Owner) Date , 19

(11) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: 600 gal./min. with 18 ft. drawdown after hrs.

" " " "

" " " "

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(12) WELL LOG: Diameter of well 12-10 inches.

Depth drilled 501 ft. Depth of completed well 501 ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Sand, white, packed	0	77
gravel, cemented	77	136
gravel, cobbles & boulders, cemented	136	145
fine sand, in part clayey; cobbles in one 3-foot zone	145	175
clay, sandy in part	175	205
sandrock, soft	205	215
sand, fine, packed in lower part	215	285
sand	285	290
clay, blue and gravel	290	301
clay, blue	301	346
sand, fine	346	355
sand and clay	355	397
sand, fine at top, coarsens toward bottom	397	445
clay, sandy	445	470
sand	470	478
clay, sandy	478	487
sand	487	501

Work started 19 . Completed 1931

(13) PUMP:

Manufacturer's Name

Type: Turbine H.P.

Well Driller's Statement:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME A. M. Jannsen Drilling Co. (Person, firm, or corporation) (Type or print)

Address

Driller's well number

[Signed] (Well Driller)

License No. Date , 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ORIGINAL
File Original and Duplicate with the STATE ENGINEER, SALEM, OREGON

LLOYD CORPORATION, LTD.
720 N. E. 12th Ave.
Portland 14, Oregon.

WATER WELL REPORT
STATE OF OREGON

MULT G749 1072

State Well No. 1N/1-35C(1)
State Permit No. G636

(1) OWNER:
Name: Sheraton Hotel Corporation
Address: 470 Atlantic Avenue
Boston, Massachusetts

(2) LOCATION OF WELL:
County: Multnomah Owner's number, if any—
NE ¼ NW ¼ Section 35 T. 1 N R. 1 E W.M.
Bearing and distance from section or subdivision corner:
253 ft. N., 110 ft. E. of S W corner, Block 112, Holladay's Addition

(3) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:
Threaded ☐ Welded ☒
16" Diam. from 0 ft. to 272 ft. Gage 3/8 wall
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS:
Perforated? ☒ Yes ☐ No
Type of perforator used: Star
SIZE of perforations 3/8 in. by 1¼ in.
8 rows perforations from 189 ft. to 204 ft.
8 rows perforations from 240 ft. to 250 ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS:
Well screen installed ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.
Was a surface seal provided? ☐ Yes ☒ No To what depth? ft.
Material used in seal—
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 121 ft. below land surface Date Dec. 3, 1957
Artesian pressure lbs. per square inch Date

Log Accepted by:
[Signed] (Owner) Date , 19

(11) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom?
Yield: ~~950~~ 1200 gal./min. with 3 ft. drawdown after 8 hrs.
" " " "
" " " "
Bailer test 150 gal./min. with no ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 53½ Was a chemical analysis made? ☒ Yes ☐ No

(12) WELL LOG:
Diameter of well inches.
Depth drilled ft. Depth of completed well ft.
Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Top soil	0	4
Sandy silt	4	49
Coarse sand and gravel	49	67
Dirty sand	67	89
Dirty sand and some gravel	89	116
Boulders, gravel, and sand	116	133
Loose gravel and sand	133	144
Gravel & sand; some boulders	144	177
Gravel, some sand and clay	177	181
Loose sand and gravel, water.	181	204
Boulders	204	209
Loose sand and gravel	209	215
Boulders, gravel, sand & clay	215	238
Sand and gravel, water-bearing	238	250
Cemented gravel	250	272

Work started Oct. 21 1957. Completed Dec. 3 1957

(13) PUMP:
Manufacturer's Name
Type: H.P.

Well Driller's Statement:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R.J. Strasser Drilling Co. (Person, firm, or corporation) (Type or print)
Address 3110 S.E. Sunset Lane, Portland, Ore.
Driller's well number 4
[Signed] R.J. Strasser, Partner (Well Driller)
License No. 10 Date Dec. 9, 1957

(USE ADDITIONAL SHEETS IF NECESSARY)

MULT

MULT 2711

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

RECEIVED FEB 3 1965 STATE ENGINEER

WATER WELL REPORT
STATE OF OREGON
(Please type or print)

State Well No. 1/1-2 B

State Permit No. G3028

(1) OWNER:
Name PACIFIC NORTHWEST BELL
Address 421 S.W. OAK ST.
PORTLAND, ORE

(2) LOCATION OF WELL:
County MULT. Driller's well number 4183
NW ¼ NE ¼ Section 2 T. 1S R. 1E W.M.
Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):
Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☒

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:
Threaded ☐ Welded ☒
8" Diam. from 0 ft. to 212 ft. Gage 277
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS:
Perforated? ☒ Yes ☐ No
Type of perforator used STAR
Size of perforations 3/8 in. by 1 1/4 in.
120 perforations from 165 ft. to 171 ft.
200 perforations from 175 ft. to 185 ft.
140 perforations from 193 ft. to 200 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Well seal—Material used in seal CEMENT GROUT
Depth of seal 56 ft. Was a packer used? NO
Diameter of well bore to bottom of seal 12 in.
Were any loose strata cemented off? ☐ Yes ☒ No Depth
Was a drive shoe used? ☒ Yes ☐ No
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.
Did any strata contain unusuable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 70 ft. below land surface Date 1/15/65
Artesian pressure lbs. per square inch Date

(11) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? RJ STRASSER DRILLING CO
Yield: 170 gal./min. with 70 ft. drawdown after 8 hrs.
" 117 " 54 " 1 "
" 84 " 44 " 1 "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 53½° Was a chemical analysis made? ☒ Yes ☐ No

(12) WELL LOG:
Diameter of well below casing
Depth drilled 225 ft. Depth of completed well 212 ft.
Formation: *Describe by color, character, size of material and structure, and show thickness of aquifiers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
TOP SOIL	0	15
SANDY CLAY	15	48
CEMENTED GRAVEL	48	92
SAND AND GRAVEL	92	88
CEMENTED GRAVEL	88	150
SAND AND GRAVEL SOME CLAY	150	170
LARGE LOOSE GRAVEL	170	183
CEMENTED GRAVEL	183	212
BROWN SAND	212	225
~~Air conditioning~~		

Work started DEC 11 1964 Completed JAN 19 1965
Date well drilling machine moved off of well JAN 15 1965

(13) PUMP:
Manufacturer's Name
Type: H.P.

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME RJ. STRASSER DRILLING CO
(Person, firm or corporation) (Type or print)
Address 8110 SE SUNSET LANE PORTLAND
Drilling Machine Operator's License No. 190
[Signed] Robert L. Strasser
(Water Well Contractor)
Contractor's License No. 10 Date FEB

(USE ADDITIONAL SHEETS IF NECESSARY)

MULT 2713

File Original and First Copy with the STATE ENGINEER, SALEM, OREGON

Record from U.S.G.S. W.S.P. 890

WATER WELL REPORT
STATE OF OREGON

State Well No. 1/1-2E(1)

State Permit No.

(1) OWNER:

Name Western Dairy Products Co.

Address

Portland

(2) LOCATION OF WELL:

County Multnomah Owner's number, if any—

SW ¼ NW ¼ Section 2 T. 1 S R. 1 E W.M.

Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):

New Well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☒ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐

Cable ☐ Jetted ☐

Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☐

" Diam. from ft. to 504 ft. Gage

" Diam. from ft. to ft. Gage

" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☐ Yes ☐ No

Type of perforator used

SIZE of perforations in. by in.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

(8) SCREENS: Well screen installed ☐ Yes ☐ No

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Was well gravel packed? ☐ Yes ☐ No Size of gravel:

Gravel placed from ft. to ft.

Was a surface seal provided? ☐ Yes ☐ No To what depth? ft.

Material used in seal—

Did any strata contain unusable water? ☐ Yes ☐ No

Type of water? Depth of strata

Method of sealing strata off

(10) WATER LEVELS:

Static level 37 ft. below land surface Date

Artesian pressure lbs. per square inch Date

Log Accepted by:

[Signed] Date , 19

(Owner)

(11) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

" " " "

" " " "

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(12) WELL LOG: Diameter of well 12-10 inches.

Depth drilled 504 ft. Depth of completed well 504 ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
unknown	0	170
gravel and sand, water bearing	170	203

Work started 19 . Completed 19

(13) PUMP:

Manufacturer's Name

Type: turbine H.P.

Well Driller's Statement:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME (Person, firm, or corporation) (Type or print)

Address

Driller's well number

[Signed] (Well Driller)

License No. Date , 19

(USE ADDITIONAL SHEETS IF NECESSARY)

STATE ENGINEER
Salem, Oregon

MULT 2714

Well Record

STATE WELL NO. 1/1/2E2
COUNTY MULTNOMAH
APPLICATION NO.

OWNER: Arden Farms Co.

MAILING ADDRESS:

CITY AND STATE:

LOCATION OF WELL: Owner's No.

.....¼ .....¼ Sec. ..... T. ..... N. S., R. ..... E. W., W.M.

Bearing and distance from section or subdivision corner

Altitude at well 55

TYPE OF WELL: Drilled Date Constructed

Depth drilled 385 Depth cased 307

Section

CASING RECORD:

14 inch

FINISH:

AQUIFERS:
Gravel, Troutdale Formation, from 170 to 175
Sand, Gravel, Sandy R. Mudstone, from 281 to 292

WATER LEVEL:

PUMPING EQUIPMENT: Type Turbine H.P.
Capacity G.P.M.

WELL TESTS:
Drawdown ft. after hours G.P.M.
Drawdown ft. after hours G.P.M.

USE OF WATER Industrial Temp. °F., 19
SOURCE OF INFORMATION USGS
DRILLER or DIGGER
ADDITIONAL DATA:
Log X Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

Pumped 1,200 gpm, drawdown 27 ft. after 1 hour.
Perforated 45-50, 168-175, and 285-295 ft.

State Printing 89316

STATE ENGINEER
Salem, Oregon

State Well No. 1/1-2E
County MULTNOMAH
~~Application No.~~ GR-3379

Well Log

Owner: Arden Farms Co. Owner's No.

Driller: R. J. Strasser Date Drilled 1944

CHARACTER OF MATERIAL	(Feet below land surface) From	To	Thickness (feet)
Clay	Surface	6	6
Gravel	6	14	8
Bolders	14	20	6
Gravel with clay binder	20	45	25
Loose Gravel with water	45	52	7
Yellow Sand	52	54	2
Gravel with clay binder	54	113	59
Silt and Sand	113	117	4
Clay	117	123	6
Cement Gravel	123	170	47
Gravel and water	170	175	5
Gravel and Ligh color Sand	175	188	13
Gravel with Clay Binder	188	229	41
Shale	229	281	52
Sand - Gravel - water	281	292	11
Clay	292	310	8
Clay - solt - some gravel	310	373	63
Sandstone	373	385	12

STATE ENGINEER
Salem, Oregon

State Well No. 1/1-2E2
County MULTNOMAH
Application No.

Well Log

Owner: Arden Farms Company Owner's No.

Driller: R. J. Strasser Drilling Company Date Drilled 1944

CHARACTER OF MATERIAL	(Feet below land surface) From	To	Thickness (feet)
Younger terrace deposits:			
Clay	0	6	6
Gravel	6	14	8
Boulders	14	20	6
Fluviolacustrine deposits and Troutdale Formation:			
Gravel with clay binder	20	45	25
Gravel, loose, water-bearing	45	52	7
Sand, yellow	52	54	2
Gravel with clay binder	54	113	59
Silt and sand, blue	113	117	4
Clay	117	123	6
Troutdale Formation:			
Gravel, cemented	123	170	47
Gravel, water-bearing	170	175	5
Gravel, with sand and clay	175	229	54
Sandy River Mudstone:			
Shale	229	281	52
Sand and gravel, water-bearing	281	292	11
Clay	292	310	18
Clay and silt, scattered gravel	310	373	63
Sandstone	373	385	12

ORIGINAL
File Original, and Duplicate with the STATE ENGINEER, SALEM, OREGON

MULT 2715

WATER WELL DRILLERS REPORT
STATE OF OREGON

Do Not Fill In — State Well No. 1/1-2B(1) C
State Permit No. 6333

(1) OWNER:
Name Lewis Brothers
Address 1005 S.E. Washington St

G-448

(2) LOCATION OF WELL:
County MULT Owner's number, if any— 1005 S.E.
R. F. D. or Street No. WASHINGTON ST
Bearing and distance from section or subdivision corner
MAP ENCLOSED

(3) TYPE OF WORK (check):
New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☐
Cable ☒
Dug Well ☐

(6) CASING INSTALLED:
Threaded ☐ Welded ☒

FROM	ft. to	ft.	Diam.	Gage or Wall
0		104	8	.317

Type and size of shoe or well ring Steel
Describe joint

If gravel packed

Diameter of Bore	from ft.	to ft.

Size of gravel:

(7) PERFORATIONS:
Type of perforator used Mills Knife
SIZE of perforations 3/8 in., length, by 2 in.

FROM ft.	to ft.	perf per foot	No. of rows
85	105	4	18

SCREENS:
Give Manufacturer's Name, Model No. and Size

CONSTRUCTION:
Was a surface sanitary seal provided? ☐ Yes ☒ No To what depth ft.
Were any strata sealed against pollution? ☒ Yes ☐ No
If yes, note depth of strata Surface water

FROM	ft. to	ft.

METHOD OF SEALING Driving casing

(9) WATER LEVELS:
Depth at which water was first found 85 ft.
Standing level before perforating 38 ft.
Standing level after perforating 38 ft.

Log Accepted by:
[Signed] ..... Dated ....., 19.....
Owner

(10) WELL TESTS:
Was a pump test made? ☒ Yes ☐ No If yes, by whom? Driller
Yield: 60 gal./min. with 42 ft. draw down after 4 hrs.
" " " "
" " " "
Artesian flow ..... g.p.m.
Shut-in pressure ..... lbs. per square inch.
Bailer test ..... g.p.m. with ..... ft. drawdown
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No
Was electric log made of well? ☐ Yes ☒ No

(11) WELL LOG:
Diameter of well, 8 inches.
Total depth 105 ft. Depth of completed well 105 ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

0 ft. to	15 ft.	Sandy soil
15 "	85 "	Cemented gravel
85 "	105 "	Sand and gravel - water-bearing

RECEIVED
DEC 23 1956
STATE ENGINEER
SALEM, OREGON

Ground elevation at well site ..... feet above mean sea level.
Work started 11-7-56 19, Completed 11-21-56 19

Well Driller's Statement:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME A.M. Jannsen Drilling Co.
(Person, firm, or corporation) (Typed or printed)
Address 21075 S.W. Tualatin Valley Highway Aloha, Oregon
Driller's well number
[Signed] Edward M. Jannsen
(Well Driller)
License No. 79 Dated 12-17-56, 19

MULT

2716

File Original and First Copy with the STATE ENGINEER, SALEM, OREGON

Record from U.S.G.S. W.SP 890

WATER WELL REPORT
STATE OF OREGON

State Well No. 1/1-3A(1)

State Permit No.

(1) OWNER:

Name Northwestern Ice and Cold Storage Co.

Address

Portland

(2) LOCATION OF WELL:

County Multnomah Owner's number, if any—

NE ¼ NE ¼ Section 3 T. 1 S R. 1 E W.M.

Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):

New Well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☒ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐

Cable ☐ Jetted ☐

Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☐

" Diam. from 0 ft. to 241 ft. Gage

" Diam. from ft. to ft. Gage

" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☐ Yes ☐ No

Type of perforator used

SIZE of perforations in. by in.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

(8) SCREENS: Well screen installed ☒ Yes ☐ No

Manufacturer's Name slotted screen 30' long

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Was well gravel packed? ☐ Yes ☐ No Size of gravel:

Gravel placed from ft. to ft.

Was a surface seal provided? ☐ Yes ☐ No To what depth? ft.

Material used in seal—

Did any strata contain unusable water? ☐ Yes ☐ No

Type of water? Depth of strata

Method of sealing strata off

(10) WATER LEVELS:

Static level 14.5 ft. below land surface Date 6/1/28

Artesian pressure lbs. per square inch Date

Log Accepted by:

[Signed] (Owner) Date , 19

(11) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: 835 gal./min. with 24 ft. drawdown after hrs.

" " " "

" " " "

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m. Date

Temperature of water 55 Was a chemical analysis made? ☐ Yes ☐ No

(12) WELL LOG: Diameter of well 12 inches.

Depth drilled 265 ft. Depth of completed well ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Fill and "muck"	0	33
clay and "muck"	33	112
sandy muck	112	125
gravel, some cobbles & boulders	125	140
sand	140	159
gravel, cemented	159	164
gravel and "shale"	164	179
clay blue	179	233
clay blue with some yellow sand	233	240
sand, yellow and clay	240	255
sand, clear	255	265

Work started 19 . Completed 19

(13) PUMP:

Manufacturer's Name

Type: Turbine H.P.

Well Driller's Statement:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. J. Strasser (Person, firm, or corporation) (Type or print)

Address

Driller's well number

[Signed] (Well Driller)

License No. Date , 19

(USE ADDITIONAL SHEETS IF NECESSARY)

STATE ENGINEER
Salem, Oregon

State Well No. 1/1-3A3
County MULTNOMAH
Application No.

Well Log

Owner: Northwestern Ice & Cold Storage Co. Owner's No.

Driller: R. J. Strasser Drilling Co. Date Drilled 1928

CHARACTER OF MATERIAL	(Feet below land surface) From	To	Thickness (feet)
Younger alluvium:			
Clay and gravel fill	0	19	19
Alluvium of abandoned river channel:			
"Muck," dark	19	33	14
Clay, "solid"	33	36	3
"Muck," dark	36	53	17
"Wood" (buried log?)	53	55	2
"Muck," dark	55	112	57
"Muck," sandy	112	125	13
Troutdale Formation:			
Gravel, some boulders	125	140	15
Sand	140	159	19
Gravel, cemented	159	164	5
Shale and gravel	164	179	15
Sandy River Mudstone:			
Clay, blue	179	233	54
Clay, blue, some sand, yellow	233	240	7
Sand, yellow, and clay	240	255	15
Sand, clean	255	265	10

RECEIVED
DEC 2 1960
STATE ENGINEER
SALEM, OREGON

MULT 2717

File Original and First Copy with the STATE ENGINEER, SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON

G1851

State Well No. 1/1-3J(1)

State Permit No.

(1) OWNER:
Name Eastside Plating Works
Address 310 SE Stephens
Portland, Oregon

(2) LOCATION OF WELL:
County ~~#####~~ Multnomah Owner's number, if any— 1
¼ ¼ Section T. R. W.M.
Bearing and distance from section or subdivision corner
SE Stephens St. approximately 65' E. of of S.E. 3rd Ave adjacent To Lot 1, Block 46 Stephens Add [illegible]on to East Portland.

(3) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☒
8" Diam. from surf. ft. to 180 ft. Gage 27 #/ft.
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☒ Yes ☐ No
Type of perforator used yes
SIZE of perforations 3/8 in. by 1¼ in.
360 perforations from 158 ft. to 170 ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS: Well screen installed ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.
Was a surface seal provided? ☐ Yes ☒ No To what depth? ft.
Material used in seal—
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 53 ft. below land surface Date Sept 27, 60
Artesian pressure lbs. per square inch Date

Log Accepted by:
[Signed] [illegible] (Owner) Date 12/1/, 1960

(11) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom?

Yield:	gal./min. with	ft. drawdown after	hrs.
100	3.5	6	
" 150	" 7	" 6	"
" 200	" 12	" 6	"

Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 55° Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG: Diameter of well 8 inches.
Depth drilled 180 ft. Depth of completed well 180 ft.
Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Sand and silt	Surf.	7
Gravel and boulders	7	33
Brown sand	33	39
Loose gravel and sand	39	46
Cemented gravel	46	62
Brown sand	62	69
Gravel and sand (clay binder)	69	83
Cemented gravel	83	126
Sand with some gravel	126	139
Cemented gravel	139	154
Loose gravel and sand, water	154	170
Medium to large cemented gravel	170	180

Work started Sept. 1 1960 Completed Sept. 28 1960

(13) PUMP:
Manufacturer's Name Johnston
Type: Submersible H.P. 7½

Well Driller's Statement:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. J. Strasser Drilling Co. (Person, firm, or corporation) (Type or print)
Address 8110 SE Sunset Lane, Portland 6, Ore.
Driller's well number 4102
[Signed] Robert L. Strasser (Well Driller)
License No. 10 Date Oct. 1, 1960

(USE ADDITIONAL SHEETS IF NECESSARY)

STATE ENGINEER
Salem, Oregon

MULT
2718

Well Record

STATE WELL NO. 1/1-3A3
COUNTY MULTNOMAH
APPLICATION NO.

OWNER: Northwestern Ice & Cold Storage Co.

MAILING ADDRESS:

CITY AND STATE:

LOCATION OF WELL: Owner's No.

.....¼ .....¼ Sec. ..... T. ..... N. S., R. ..... E. W., W.M.

Bearing and distance from section or subdivision corner

Altitude at well 35

TYPE OF WELL: Drilled Date Constructed

Depth drilled 265 Depth cased 241

Section

CASING RECORD:

12 inch

FINISH:

AQUIFERS:

Sand, Sandy River Mudstone, from 240 to 265

WATER LEVEL:

14.5 feet below land surface, 1928

PUMPING EQUIPMENT: Type Turbine H.P.
Capacity 500 G.P.M.

WELL TESTS:
Drawdown ft. after hours G.P.M.
Drawdown ft. after hours G.P.M.

USE OF WATER Industrial Temp. °F., 19
SOURCE OF INFORMATION USGS
DRILLER or DIGGER
ADDITIONAL DATA:
Log X Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

Supplies about 1/2 million gallons per day for cooling.
Temperature 54° F.

State Printing 89316

STATE ENGINEER
Salem, Oregon

MUL-F
2721

Well Record

STATE WELL NO. 1/1-3
COUNTY MULTNOMAH
APPLICATION NO.

OWNER: Northwestern Ice & Cold Storage Co.
MAILING ADDRESS:
CITY AND STATE:

LOCATION OF WELL: Owner's No.

.....¼ .....¼ Sec. ..... T. ..... N. S., R. ..... E. W., W.M.

Bearing and distance from section or subdivision corner

Altitude at well 50

TYPE OF WELL: Drilled Date Constructed 1912?

Depth drilled 235 Depth cased

Section

CASING RECORD:

8 inch

FINISH:

AQUIFERS:

WATER LEVEL:

PUMPING EQUIPMENT: Type H.P.
Capacity 350 G.P.M.

WELL TESTS:
Drawdown ft. after hours G.P.M.
Drawdown ft. after hours G.P.M.

USE OF WATER Industrial Temp. 54 °F. , 19
SOURCE OF INFORMATION USGS
DRILLER or DIGGER
ADDITIONAL DATA:
Log Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

State Printing 89316

STATE ENGINEER
Salem, Oregon

MULT 2727

Well Record

STATE WELL NO. 1/1-2E
COUNTY MULTNOMAH
~~APPLICATION NO.~~ GR-3379

OWNER: Arden Farms Co.

MAILING ADDRESS: 617 SE Main St.

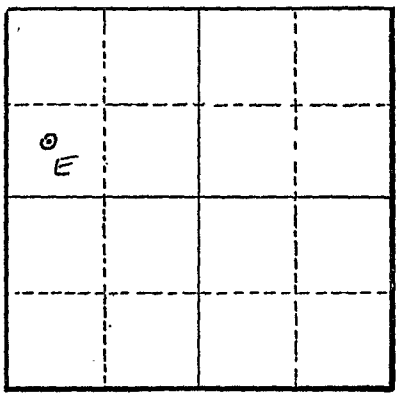
CITY AND STATE: Portland, Oregon

LOCATION OF WELL: Owner's No.

SW ¼ NW ¼ Sec. 2 T. 1 ~~N.~~ S., R. 1 ~~W.~~ E., W.M.

Bearing and distance from section or subdivision corner 120' W of NE corner of block 134
600' E & 750' N from W corner Section 2

Altitude at well



Section 2

TYPE OF WELL: Drilled Date Constructed 1944

Depth drilled 307' Depth cased

CASING RECORD:
14-inch

FINISH:
NA
45' to 50'
168' to 175'
285' to 295'

AQUIFERS:

WATER LEVEL:
62'

PUMPING EQUIPMENT: Type Deming Deep Well Turbine Pump H.P. 75
Capacity 1200 G.P.M.

WELL TESTS:
Drawdown 22 ft. after hours 1000 G.P.M.
Drawdown 27 ft. after hours 1200 G.P.M.

USE OF WATER Manufacturing Temp. °F., 19
SOURCE OF INFORMATION GR-3852
DRILLER or DIGGER R. J. Strasser
ADDITIONAL DATA:
Log X Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

State Printing 89316

STATE ENGINEER
Salem, Oregon

MULT 2770

Well Record

STATE WELL NO. 1/1-11D1
COUNTY MULTNOMAH
APPLICATION NO.

OWNER: Dairy Coop. Association

MAILING ADDRESS:

CITY AND STATE:

LOCATION OF WELL: Owner's No.

.....¼ .....¼ Sec. ..... T. ..... N. S., R. ..... E. W., W.M.

Bearing and distance from section or subdivision corner

Altitude at well 40

TYPE OF WELL: Drilled Date Constructed

Depth drilled 490 Depth cased 433

Section

CASING RECORD:

16 inch

FINISH:

AQUIFERS: Sand, Troutdale Formation from 119 to 122
" " " " 194 to 218
Sand, Gravel, Sandy R. Mudstone from 415 to 423

WATER LEVEL:
49 feet below land surface, January, 1946

PUMPING EQUIPMENT: Type Turbine H.P.
Capacity G.P.M.

WELL TESTS:
Drawdown ft. after hours G.P.M.
Drawdown ft. after hours G.P.M.

USE OF WATER Industrial Temp. °F., 19
SOURCE OF INFORMATION USGS
DRILLER or DIGGER
ADDITIONAL DATA:
Log X Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

Pumped 1,200 gpm, drawdown 108 ft. after 48 hours.
Perforated 105-115, 221-230, 245-255, and 419-425 ft.

State Printing 89316

STATE ENGINEER
Salem, Oregon

State Well No. 1/1-11D1
County MULTNOMAH
Application No.

Well Log

Owner: Dairy Coop. Assoc. Owner's No.

Driller: R. J. Strasser Drilling Co. Date Drilled 1946

CHARACTER OF MATERIAL	(Feet below land surface) From	To	Thickness (feet)
Artificial fill:			
Fill	0	12	12
Fluviolacustrine Deposits:			
Gravel, loose	12	27	15
Gravel, bouldery	27	43	16
Troutdale Formation:			
Gravel, cemented	43	119	76
Sand, fine, water-bearing	119	122	3
Gravel, cemented	122	194	72
Sand, water-bearing	194	218	24
Gravel	218	220	2
Gravel, cemented	220	258	38
Sandy River Mudstone:			
Clay and fine sand	258	263	5
Clay, blue	263	313	50
Clay, brown	313	316	3
Sand	316	324	8
"Soapstone," green	324	331	7
Sand	331	334	3
Clay, blue and brown	334	340	6
Sand	340	379	39
Clay, brown; some gravel below 391 ft.	379	396	17
Clay, sandy	396	410	14
Sand, gray	410	415	5

(Continued)

STATE ENGINEER
Salem, Oregon

MULT 2771

Well Record

GR- 1504

STATE WELL NO. 1/1-11J
COUNTY Multnomah
APPLICATION NO. GR- 1561

OWNER: Libby, McNeill & Libby

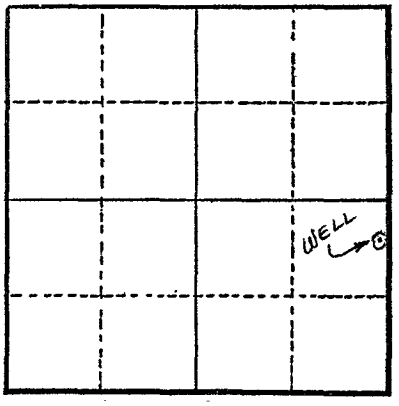
MAILING ADDRESS:

LOCATION OF WELL: Owner's No.

CITY AND STATE: Portland, Oregon

NE ¼ SE ¼ Sec. 11 T. 1 ~~N~~ S., R. 1 ~~W~~ E., W.M.

Bearing and distance from section or subdivision corner 100' W. & 2100' N. from SE cor. Sec. 11



Altitude at well 25'

TYPE OF WELL: Drilled Date Constructed 1929

Depth drilled 330' Depth cased 330'

Section 11

CASING RECORD:

16" from surface to 80'
12" from surface to 301'
10" from 294' to 330'

FINISH:

Perforated: 40 - 3/8" wide x 1¼" vertical from 215 to 240' & from 282 to 297 ft.
40 - ¼" x 2" vertical from 300 to 330 ft.

AQUIFERS:

WATER LEVEL:

20.5'

PUMPING EQUIPMENT: Type Layne & Bowler H.P. 75
Capacity 1400 G.P.M.

WELL TESTS:

Drawdown 55 ft. after hours 1400 G.P.M.

Drawdown ft. after hours G.P.M.

USE OF WATER Manufacturing Temp. °F., 19

SOURCE OF INFORMATION GR Record

DRILLER or DIGGER

ADDITIONAL DATA:

Log X Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

State Printing 89316

STATE ENGINEER
Salem, Oregon

State Well No. 1/1-11J
County Multnomah
Application No. GR-1561

Well Log

Owner: Libby, McNeill & Libby Owner's No.

Driller: Date Drilled 1929

CHARACTER OF MATERIAL	(Feet below land surface) From	To	Thickness (feet)
Top soil & clay	0	18	18
Loose gravel with some water	18	25	7
Cemented gravel	25	38	13
Silt & sand	38	62	24
Cemented gravel	62	107	45
Yellow clay	107	110	3
Cemented gravel	110	147	37
Gravel with some clay & sand	147	190	43
Cemented gravel	190	215	25
Gravel (water bearing)	215	240	25
Cemented gravel	240	282	42
Water bearing sand & gravel	282	330	48

STATE ENGINEER
Salem, Oregon

State Well No. 1/1-11H1

County Multnomah

Application No.

Chemical Analysis

OWNER Libby, McNeill, & Libby OWNER'S NO.

ANALYST USGS Address

Date of Collection 11/28/29

Point of Collection

	P.P.M.	E.P.M.
Silica (SiO_2)	45.	
Iron (Fe) Total	.06	
Manganese (Mn)		
Calcium (Ca)	15.	
Magnesium (Mg)	10.	
Sodium (Na)	8.2	
Potassium (K)	3.0	
Bicarbonate (HCO_3)	118.	
Carbonate (CO_3)	0.	
Sulfate (SO_4)	4.4	
Chloride (Cl)	2.2	
Fluoride (F)		
Nitrate (NO_3)	.0	
Boron (B)		
Dissolved Solids	141.	
Hardness as $CaCO_3$	78.	
Specific Conductance (Micromhos at 25°C)		
pH		
Percent Sodium		
Sodium Absorption Ratio (S.A.R.)		
CLASS		

State Printing 89313

STATE ENGINEER
Salem, Oregon

MULT 2772

Well Record

STATE WELL NO. 1/1-11H1
COUNTY MULTNOMAH
APPLICATION NO.

OWNER: Libby, McNeill, & Libby

MAILING ADDRESS:

CITY AND STATE:

LOCATION OF WELL: Owner's No.

.....¼ .....¼ Sec. ..... T. ..... N. S., R. ..... E. W., W.M.

Bearing and distance from section or subdivision corner

Altitude at well 65

Section

TYPE OF WELL: Drilled Date Constructed

Depth drilled 330 Depth cased 330

CASING RECORD:

12-10 inch

FINISH:

AQUIFERS:
Gravel, Troutdale formation, from 215 to240
Sand, Gravel, Troutdale Formation, from 282 to 330

WATER LEVEL:
20.5 feet below land surface, 1929

PUMPING EQUIPMENT: Type Turbine H.P.
Capacity G.P.M.

WELL TESTS:
Drawdown ft. after hours G.P.M.
Drawdown ft. after hours G.P.M.

USE OF WATER Industrial Temp. °F. 19
SOURCE OF INFORMATION USGS
DRILLER or DIGGER
ADDITIONAL DATA:
Log X Water Level Measurements Chemical Analysis X Aquifer Test

REMARKS:

Pumped 800 gpm, drawdown 50 ft.
Perforated 215-240, 282-297, and 301-330 ft.

State Printing 89316

STATE ENGINEER
Salem, Oregon

State Well No. 1/1-11H1
County MULTNOMAH
Application No.

Well Log

Owner: Libby, McNiell & Libby Owner's No.

Driller: R. J. Strasser Drilling Co. Date Drilled 1929

CHARACTER OF MATERIAL	(Feet below land surface) From	To	Thickness (feet)
Alluvium of an abandoned river channel:			
Soil and clay	0	18	18
Gravel, loose, water-bearing	18	25	7
Gravel, cemented	25	38	13
Silt, sandy	38	62	24
Troutdale Formation:			
Gravel, cemented	62	107	45
Clay, yellow	107	110	3
Gravel, cemented	110	147	37
Gravel, with sand and clay	147	190	43
Gravel, cemented	190	215	25
Gravel, water-bearing	215	240	25
Gravel, cemented	240	282	42
Sand and gravel, water-bearing	282	330	48

1/1-11E

MULT 2778

RECEIVED APR 24 1967 STATE ENGINEER SALEM, OREGON

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

WELL REPORT
STATE OF OREGON
(Please type or print)

State Well No. 1/1-11 E

State Permit No.

(1) OWNER:
Name Irwin-Hodson Co.
Address 2838 S. E. 9th Ave.
Portland, Ore. 97202

(2) LOCATION OF WELL:
County Multnomah Driller's well number
¼ ¼ Section T. R. W.M.
Bearing and distance from section or subdivision corner
Street Address above
City of Portland

(3) TYPE OF WORK (check):
New Well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:
Threaded ☒ Welded ☒
4" Diam. from 0 ft. to 153 ft. Gage .375
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Well seal—Material used in seal
Depth of seal ft. Was a packer used?
Diameter of well bore to bottom of seal in.
Were any loose strata cemented off? ☐ Yes ☐ No Depth
Was a drive shoe used? ☐ Yes ☐ No
Was well gravel packed? ☐ Yes ☐ No Size of gravel:
Gravel placed from ft. to ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 24 ft. below land surface Date 3-13-67
Artesian pressure lbs. per square inch Date

(11) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
~~Bailer test~~ Airlift 45 gal./min. with 116 ft. drawdown after 4 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:
Diameter of well below casing 4
Depth drilled 153 ft. Depth of completed well 153 ft.
Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Previously drilled	0	113
Loose medium gravel	113	136
Cemented gravel	136	145
Large gravel, water bearing	145	153

Work started 2-2 19 67 Completed 3-14 19 67
Date well drilling machine moved off of well 3-14 19 67

(13) PUMP:
Manufacturer's Name Jacuzzi
Type: Submersible H.P. 5

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME A. M. Jannsen Drilling Co.
(Person, firm or corporation) (Type or print)
Address 21075 SW Tual. Vlly. Hwy. Aloha, Ore.
Drilling Machine Operator's License No. 333
[Signed] Edward M. Jannsen
(Water Well Contractor)
Contractor's License No. 79 Date 4-18, 19 67

(USE ADDITIONAL SHEETS IF NECESSARY)

STATE ENGINEER
Salem, Oregon

MULT
2780

Well Record

STATE WELL NO. 1/1-11
COUNTY MULTNOMAH
APPLICATION NO.

OWNER: Southern Pacific Railroad

MAILING ADDRESS:

CITY AND STATE:

LOCATION OF WELL: Owner's No.

.....¼ .....¼ Sec. ..... T. ..... N. S., R. ..... E. W., W.M.

Bearing and distance from section or subdivision corner

Altitude at well 60

TYPE OF WELL: Dug Date Constructed

Depth drilled 40 Depth cased

Section

CASING RECORD:

240 inches

FINISH:

AQUIFERS:

Young alluvium

WATER LEVEL:
21 feet below measuring point.

PUMPING EQUIPMENT: Type H.P.
Capacity 200 G.P.M.

WELL TESTS:
Drawdown ft. after hours G.P.M.
Drawdown ft. after hours G.P.M.

USE OF WATER Industrial Temp. 57° °F., 19
SOURCE OF INFORMATION USGS
DRILLER or DIGGER
ADDITIONAL DATA:
Log Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

At Brooklyn shop. Water forms scale in boilers; use discontinued.

State Printing 89316

STATE ENGINEER
Salem, Oregon

MULT 2781

Well Record

STATE WELL NO. 1/1-11 D
COUNTY MULTNOMAH
APPLICATION NO. GR-1853

OWNER: Dairy Cooperative Association

MAILING ADDRESS: 1313 E 12th Ave

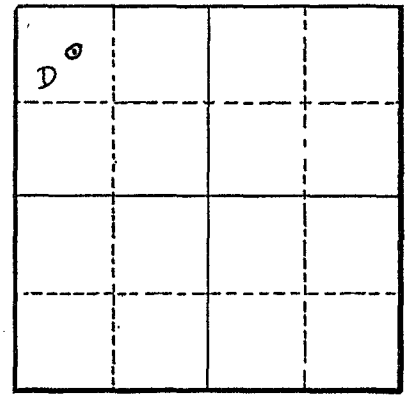
CITY AND STATE: Portland, Oregon

LOCATION OF WELL: Owner's No.

NW ¼ NW ¼ Sec. 11 T. 1 S., R. 1 E., W.M.

Bearing and distance from section or subdivision corner

Altitude at well



Section 11

TYPE OF WELL: Drilled Date Constructed 1946

Depth drilled 490' Depth cased 450'

CASING RECORD:

16-inch

FINISH:

Casing perforated

AQUIFERS:

WATER LEVEL:

PUMPING EQUIPMENT: Type Pomona Turbin H.P. 60
Capacity 750 G.P.M.

WELL TESTS:
Drawdown ft. after hours 750 G.P.M.
Drawdown ft. after hours G.P.M.

USE OF WATER Manufacturing Temp. °F., 19
SOURCE OF INFORMATION GR-3986
DRILLER or DIGGER
ADDITIONAL DATA:
Log X Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

State Printing 89316

STATE ENGINEER
Salem, Oregon

State Well No. 1/1-11 D
County Multnomah
Application No. GR-1853

Well Log

Owner: Dairy Cooperative Association Owner's No.

Driller: Date Drilled 1946

CHARACTER OF MATERIAL	(Feet below land surface) From	To	Thickness (feet)
Surface	0	12	12
Loose Dry gravel	12	27	15
Gravel and boulders	27	42	15
Cemented gravel	42	118	76
Fine sand and water	118	121	3
Cemented gravel	121	193	72
Sand with water	193	217	24
Loose gravel	217	219	2
Cemented gravel	219	257	38
Clay and fine sand	257	262	5
Blue Clay	262	312	50
Brown clay	312	315	3
Sand	315	323	8
Green soap stone	323	330	7
Dry sand	330	333	3
Blue clay	333	335	2
Brown clay	335	339	4
Sand	339	378	39
Brown clay	378	390	12
Brown clay and gravel	390	395	5
Sandy clay	395	409	14
Grey sand	409	414	5
Gravel - sand and water	414	422	8
Shale	422	489	67

Continued--

STATE ENGINEER
Salem, Oregon

State Well No. 1/1-11D1
County
Application No.

Well Log

Owner: Dairy Coop. Assoc. Owner's No.

Driller: Date Drilled

CHARACTER OF MATERIAL	(Feet below land surface) From	To	Thickness (feet)
Gravel and sand, water-bearing	415	423	8
Shale	423	490	67

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
1120 SW Fifth Avenue, Room 1000, Portland, Oregon 97204 ▪ Dan Saltzman, Commissioner ▪ Dean Marriott, Director

TRANSMITTAL FORM

To: **Tom Gainer**
Oregon Dept. of Environmental Quality
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987

From: **Dawn Sanders** DS
City of Portland BES
1120 SW Fifth Ave., Rm 1000
Portland, OR 97204-1912

Date: April 6, 2011

Re: PGE-Hawthorne Source Control Investigation Report

We Are Sending You:

x	Attached	Under separate cover via	
	Shop Drawings	Documents	Tracings
	Prints	Specifications	Catalogs
	Copy of letter	Other:	

Quantity	Description
1	Report titled "Summary of observations at the PGE-Hawthorne Building, 1510 SE Water Avenue, Portland, OR"

Copy to: Jayne Allen/PGE
David Weatherby/URS

Tom, I'm sending you the report summarizing findings from the inspection conducted by BES Pretreatment and Industrial Stormwater staff. The Pretreatment program will be conducting some follow-on work at the site, per the report. Let me know if you have any questions.

Three separate dye tests were conducted:

- On February 2, 2011, dye was inserted into catch basin FD-F at the base of the ramp. Dye was observed in Sump E, Sump A (the pumped discharge sump to the sanitary) and at node ABU872 (sanitary manhole in street). No dye was observed in stormwater nodes ABU869 and ABU874. No dye was seen in FD-D either. It is not clear how FD-D is connected to the rest of the basement drainage system at this time.

- On February 15, 2011, dye was inserted into CB #3 on eastside of the building. Dye was observed in storm node ABU869 on SE Water Avenue and at ABU 874. No dye was observed Sump A or the sanitary sewer line at nodes ABQ912 and ABU872.

- On March 1, 2011 dye was inserted into Sump J. Dye was observed in Sump K, Sump I, Sum N, and Sump A which is pumped to the sanitary sewer in SE Clay. No dye was observed in stormwater nodes ABU869 and ABU874.

Pretreatment Evaluation

Wastewater at the PGE Hawthorne building discharged to sanitary sewer includes domestic water, storm water that enters floor drain FD-F, and any de minimus amounts that reach other floor drains in the basement area. A review of water bills indicates that PGE uses an average of 500-gallons a day.

The inspection revealed no conditions that represent a threat to the collection system or to the treatment plant; however due to the absence information concerning discharge water quality the Pretreatment Section has decided collect wastewater and sediment samples to gather additional information. The appropriateness of a wastewater discharge permit or other control mechanism will be evaluated when those results are returned.

-Michael Hauser
April 4, 2011

Industrial Stormwater Evaluation

The historic stormwater discharges included the basement sumps, other interior building drains, as well as the on-site catch basins, because the sewer in SE Clay was used as a combined sewer line until ~1970. At that time the basement sumps were sealed off from the storm sewer in SE Clay and connected to the City's sanitary sewer line that flows west on SE Clay to SE Water and then flows north on SE Water towards SE Hawthorne. Based on historic records, this site and neighboring properties were used for power line equipment maintenance, storage and staging for off site work since ~ 1920. This included transformers, switch gear and waste materials, solids, liquids and oils.

April 4, 2011

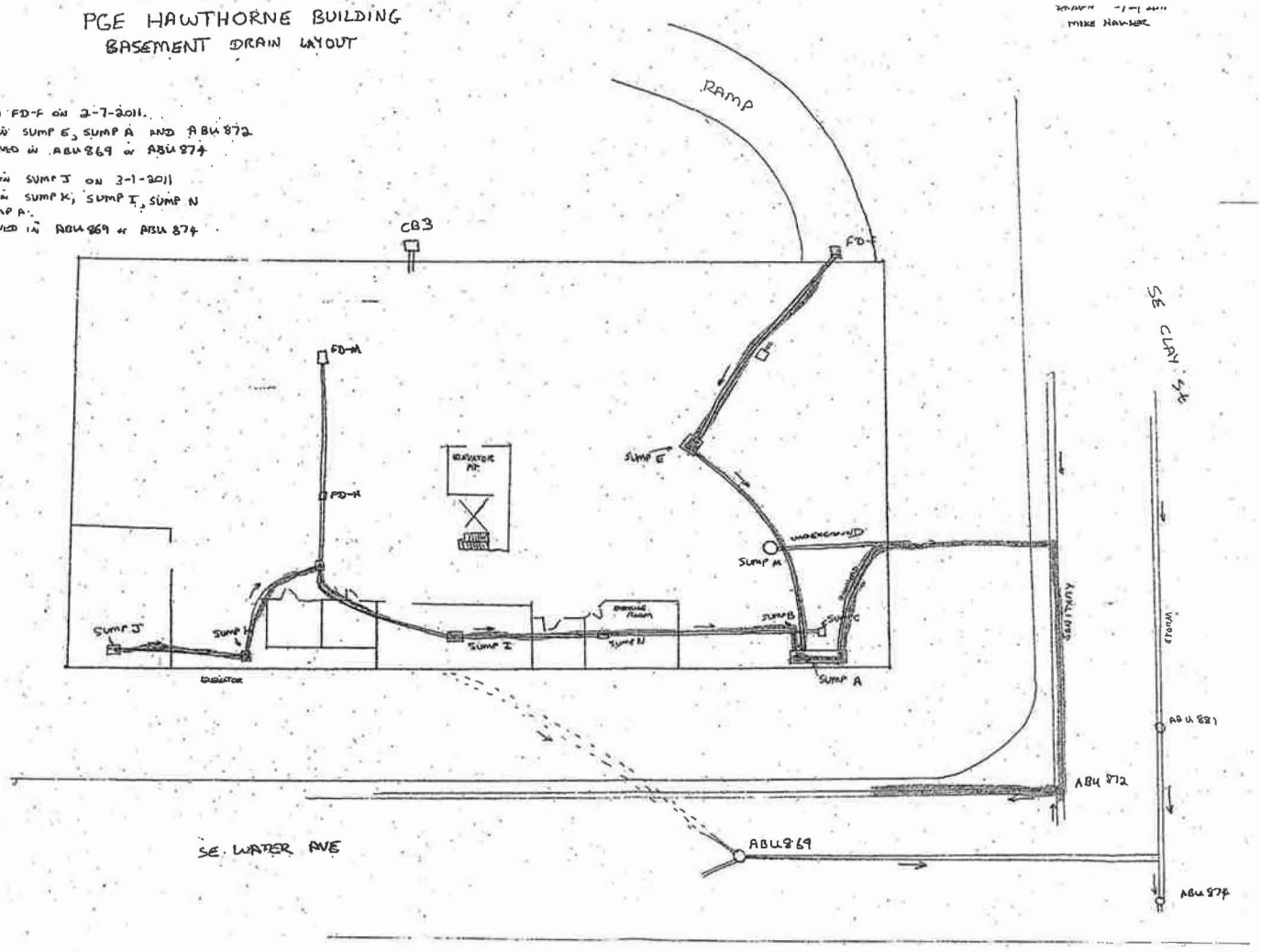
Supporting and field documentation

PGE HAWTHORNE BUILDING
BASEMENT DRAIN LAYOUT

MIKE NAWSER

NOTES: ① DYE INSERTED IN FD-F ON 2-7-2011.
DYE OBSERVED IN SUMP E, SUMP A AND ABU 872
NO DYE OBSERVED IN ABU 869 or ABU 874

② DYE INSERTED IN SUMP J ON 3-1-2011
DYE OBSERVED IN SUMP K, SUMP I, SUMP N
SUMP B, SUMP A.
NO DYE OBSERVED IN ABU 869 or ABU 874



City of Portland
Environmental Services

DAILY FIELD REPORT

Project: PGE HAWTHORNE DYE TEST
Project No.:
Location: 1510 SE WATER AVE
Date: 2-7-2011
Subject: DYE TEST
By: MJH

1:00 leave WPCL for PGE Building at 1510 SE WATER AVE to conduct dye test. The aim is to confirm how the PGE building is connected to the city sewer system.

1:30 Arrive at PGE building. Meet w/ Chip Bloomer and Bob Millican of PGE.
The goal of todays dye test is to insert dye into FD-F at the bottom of the ramp and see where it goes.

1:35 Remove stormwater gabrie from FD-F and insert green flouroscene dye into basin. Chip sets up a hose with about 3-5 gpm to flush water through the lines.

1:38 Observe dye in Sump E. DO NOT observe dye in FD-D.

1:43 Observe dye in Sump A, the discharge sump. DO (NOT) observe dye in sump's B or C.

1:50 Call Randy Belston of Field Operations to come to the site.

1:53 Sump pump in Sump A actuates discharging water to the sewer system. We need to confirm where it is going.

Attachments

2276

City of Portland
Environmental Services

DAILY FIELD REPORT

Page 1 of

Project PGE Hawthorne Bldg
Location 1510 SE Water Ave
Subject Dye test

Project No.
Date 2-15-2011
By MJU

1:00 leave WPCL
1:30 Arrive @ PGE Building, 1510 SE Water Ave.
Discuss todays activity with Chip Bloomer.
1:40 put dye into CB-3: catch basin under cover on the east side of the building
Put a hose into the CB to force the dye through the lines.

1:55 Observe dye at ABU874 - storm line leading to OF33
1:50 Observe dye at ABU869 - west of building.

1:53 Did NOT observe dye in sanitary MH ABQ917

2:00 Go to discharge sump inside building. No dye present.

Attachments

Portland General Electric
121 SW Salmon Street
1WTC1302
Portland, Oregon 97204

Bob Millican
Project Manager
Maintenance & Construction
Facility Management

Office (503) 464-8177
Fax (503) 464-8180
Cell (503) 539-9123
bob.millican@pgn.com
www.PortlandGeneral.com

Portland General Electric
121 SW Salmon Street
3WTCBR05
Portland, Oregon 97204

Chip Bloomer
Environmental Specialist
Engineer

Office (503) 464-7109
Fax (503) 464-8527
chip.bloomer@pgn.com
www.PortlandGeneral.com

URS Corporation
Stormwater System Solids Sample Datasheet

Location

Sample Location: CB-1	Sample Team: C. PEARSON	Date: 5/13/10

Latitude: N N/A

Longitude: W

Description of Location: CATCH BASIN CORNER OF PARKING LOT, LOTS OF DEBRIS

Water Depth and Flow Description: NONE

Depth of Solids in Catch Basin or Pipe: 1.5" OF SILT, SOIL AND ORGANIC MATTER

Sample Collection

Sampling Method: GRAB / COMPOSITE

Decontamination Method: ALCONOX, NITRIC, METHANOL

Depth and Volume of Water Pumped Off: NONE

Point of Water Disposal: N/A

Sample ID: CB-1-051310	Container(s): 1L 8oz JAR	Sample Time: 840

QA/QC Samples: —

Description

Color: DARK BROWN

UCSC Classification: SILT

Odor/sheen/Discoloration of Water or Solids: NO ODOR ON WATER OR SOLIDS

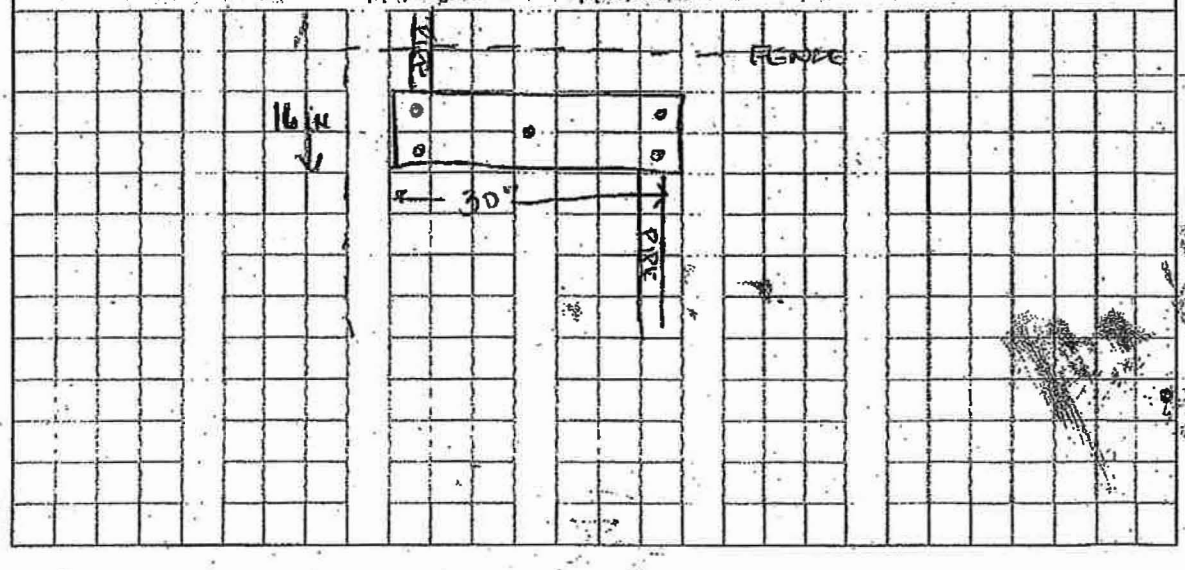
Benthic Organisms: NONE

Depth of bioactive layer: N/A

Amount and Type of Debris: MOD. LEAVES

Diagram of Sample Location

Record: dimensions of catch basin or pipe, diagram inlet/outlet pipes, source of inlet flows, and destination of outlet flows.



URS Corporation
Stormwater System Solids Sample Datasheet

Location

Sample Location: CB-2B	Sample Team: C. PEARSON	Date: 5/13/10

Latitude: N } N/A
Longitude: W

Description of Location: MID- PARKING LOT.

Water Depth and Flow Description: 6" NO FLOW.

Depth of Solids in Catch Basin or Pipe:

Sample Collection

Sampling Method: GRAB | COMPOSITE.

Decontamination Method: ALGNIOX, NITRIC, METHANOL

Depth and Volume of Water Pumped Off: NONE

Point of Water Disposal: —

Sample ID: CB-2B-051310	Container(s): 16 oz JAR (2x)	Sample Time: 930

QA/QC Samples: DUPLICATE SAMPLE IN CB-4-051310 @ 730 AM

Description

Color: BLACK

UCSC Classification: SILT W/ SAND AND GRAVEL

Odor/sheen/Discoloration of Water or Solids: HEAVY SHEEN, NON ORGANIC ODOR

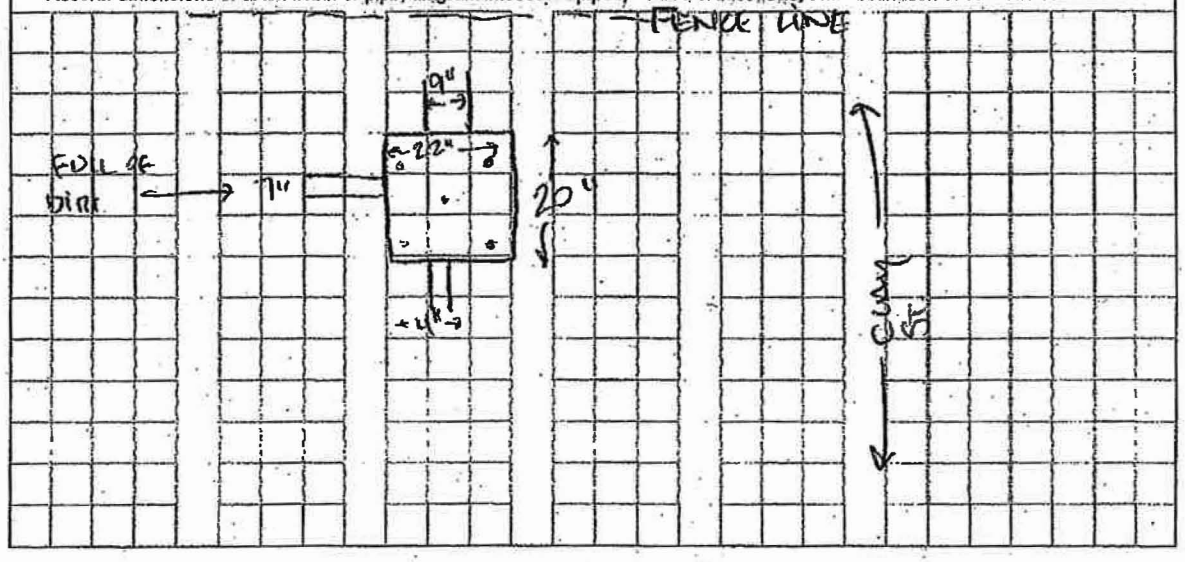
Benthic Organisms: NONE.

Depth of bioactive layer: —

Amount and Type of Debris: ROCKS, LEAVES TRASH

Diagram of Sample Location

Record: dimensions of catch basin or pipe, diagram inlet/outlet pipes, source of inlet flows, and destination of outlet flows.



URS Corporation
Stormwater System Solids Sample Datasheet

Location

Sample Location: FD-F	Sample Team: C. PEARSON	Date: 5/13/10

Latitude: N } N/A
Longitude: W

Description of Location: ENTRY WALL TO BASEMENT

Water Depth and Flow Description: 8" FLOW TO PIPE LEADING FURTHER INTO BASEMENT

Depth of Solids in Catch Basin or Pipe: 1"

Sample Collection

Sampling Method: GRAB, COMPOSITE.

Decontamination Method: ALCONOX, NITRIC, METHANOL

Depth and Volume of Water Pumped Off: 8"

Point of Water Disposal: DRUMMED ON-SITE

Sample ID: CB-F-051310	Container(s): 16 oz. JAR	Sample Time: 9:45P

QA/QC Samples: —

Description

Color: BLACK

UCSC Classification: SILT W/ TRACE SAND

Odor/sheen/Discoloration of Water or Solids: STRONG ORGANIC ODOR, HEAVY SHEEN.

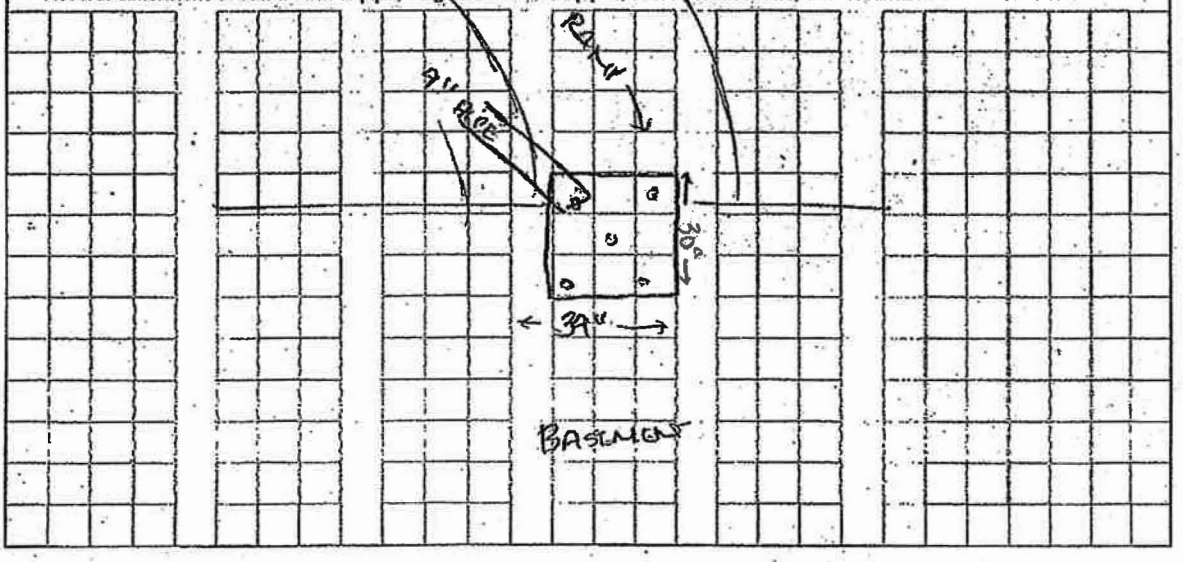
Benthic Organisms: NONE

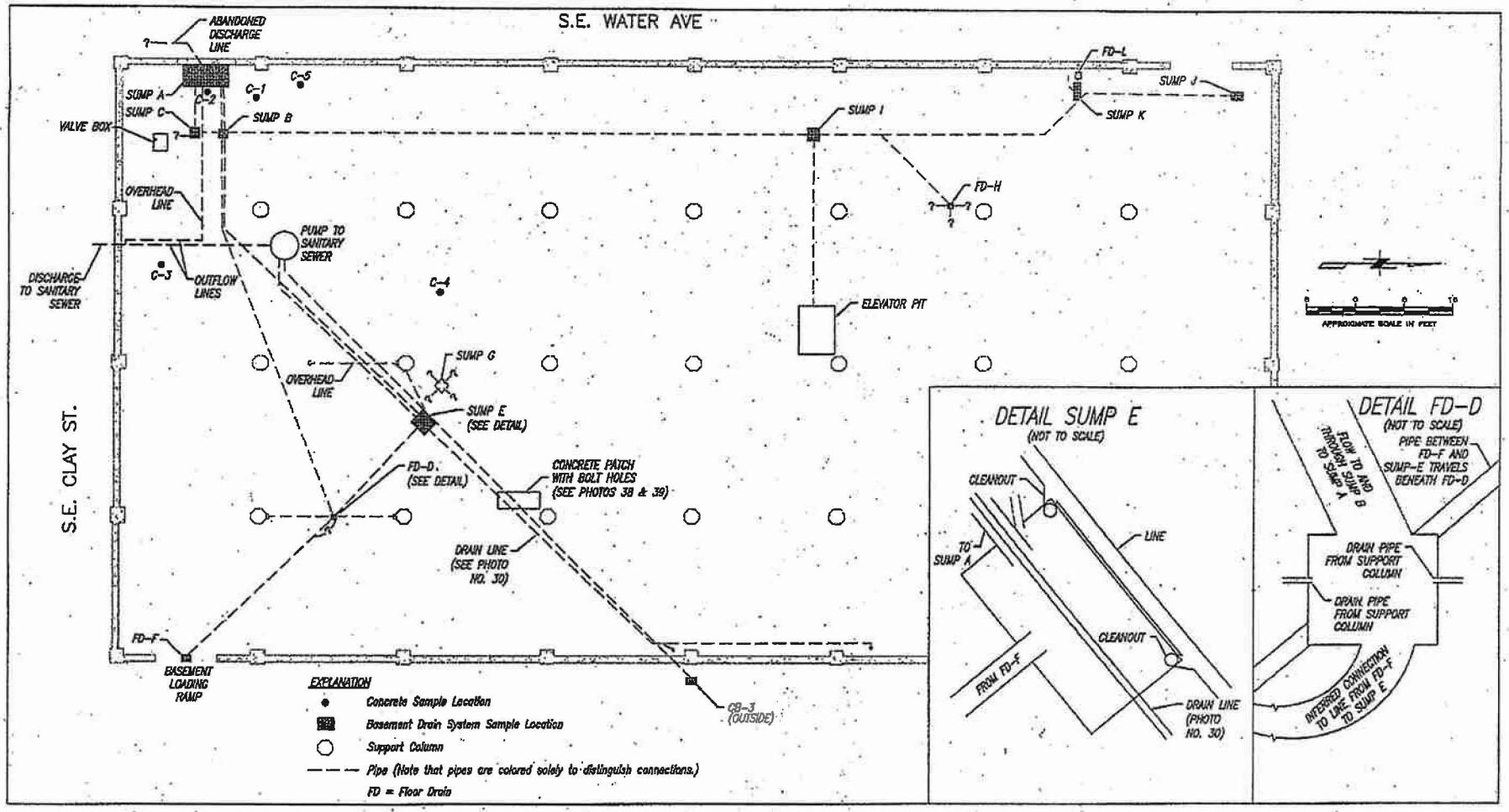
Depth of bioactive layer: —

Amount and Type of Debris: LEAVES AND TWIGS

Diagram of Sample Location

Record: dimensions of catch basin or pipe, diagram inlet/outlet pipes, source of inlet flows, and destination of outlet flows.





URS

INTERIOR SAMPLE LOCATIONS

HAWTHORNE BUILDING DATA REPORT
1810 SE WATER AVE
PORTLAND, OREGON

SEPTEMBER 2010
25997063

FIGURE 3

Table 6. Basement Drainage System Solids Sample Analytical Results
Hawthorne Building - Data Report

Station	CB-3	Sump A	Sump B	Sump C	FD-D	Sump E	FD-F	FD-H	Sump I	Sump J	Sump K	Portland Harbor Joint Source Control SLVs[2]	
Sample ID	CB-3-051310	HB-A-051310	HB-B-051310	HB-C-051310	HB-D-051310	HB-E-051310	CB-F-051310	HB-H-051310	HB-I-051310	HB-J-051310	HB-K-051310		
Sample Date	5/13/2010	5/13/2010	5/13/2010	5/13/2010	5/13/2010	5/13/2010	5/13/2010	5/13/2010	5/13/2010	5/13/2010	5/13/2010	Toxicity	Bioaccumulation
PCBs (mg/kg)													
Aroclor 1016	0.00834 U	0.763 U	0.681 U	16.3 U	0.573 U	0.190 U	0.167 U	1.48 U	0.902 U	2.34 U	0.284 U	0.530	--
Aroclor 1221	0.00834 U	0.763 U	0.681 U	16.3 U	0.573 U	0.190 U	0.167 U	1.48 U	0.902 U	2.34 U	0.284 U	--	--
Aroclor 1232	0.00834 U	0.763 U	0.681 U	16.3 U	0.573 U	0.190 U	0.167 U	1.48 U	0.902 U	2.34 U	0.284 U	--	--
Aroclor 1242	0.00834 U	0.763 U	0.681 U	16.3 U	0.573 U	0.190 U	0.167 U	1.48 U	0.902 U	2.34 U	0.284 U	--	--
Aroclor 1248	0.00834 U	0.763 U	0.681 U	16.3 U	0.573 U	0.190 U	0.167 U	1.48 U	0.902 U	2.34 U	0.284 U	1.60	--
Aroclor 1254	0.202 J	30.6	30.6	16.3 U	5.49	2.86	0.26 J	29.7	40.6	2.34 U	8.42	0.300	--
Aroclor 1260	0.416 J	34.0	35.8	57.5	17.0	3.07	1.09	42.3	45.2	69.9	8.79	0.200	--
Aroclor 1262	0.00834 U	0.763 U	0.681 U	16.3 U	0.573 U	0.190 U	0.167 U	1.48 U	0.902 U	2.34 U	0.284 U	--	--
Aroclor 1268	0.00834 U	0.763 U	0.681 U	16.3 U	0.573 U	0.190 U	0.167 U	1.48 U	0.902 U	2.34 U	0.284 U	--	--
Total PCBs as Aroclors	0.620 J	64.6	66.7	57.5	22.0	5.96	1.35 J	72.0	87.5	69.9	17.2	0.676	0.000390
Metals (mg/kg)													
Aluminum	9,010	14,700	8,260	18,300	112,000	14,500 J	11,600	11,700	6,610	6,750	9,250	--	--
Antimony	6.70	16.0	31.4	57.3	13.5	11.2	8.86	18.4	27.5	37.1	20.7	64.0	--
Arsenic	7.43	34.2	10.5	34.3	23.0	8.55	2.91	9.97	12.5	25.7	6.47	33.0	7.00
Cadmium	2.18	4.71	33.7	48.5	64.5	4.82	3.92	43.2	51.1	54.5	16.0	4.98	1.00
Chromium	59.1	332	3,260	29,300	451	90.7	54.4	619	1,800	1,240	160	111	--
Copper	259	1,040	2,740	9,730	14,500	1,070	393	1,210	1,550	1,700	762	149	--
Lead	64	7,650	2,360	48,800	876	709	474	2,700	3,080	3,980	1,250	128	17.0
Mercury	0.141	27.6	19.2	340	2.02	29.3	21.9	19.1	29.5	1,590	6.97	1.06	0.0700
Nickel	46.3	54.1	122	109	682	54.5	42.3	530	43.8	79.6	55.9	48.6	--
Selenium	0.704 U	1.49 U	1.05 U	1.27 U	1.14 U	0.735 U	0.780 U	0.977 U	0.976 U	0.653 U	0.886 U	5.00	2.00
Silver	1.42 J	0.85	18.4	143	7.81	5.57	2.42	6.72	9.01	4.64	8.16	5.00	--
Zinc	1,070	3,070	7,270	8,200	16,000	2,040	280	10,930	11,500	13,200	7,830	469	--
Petroleum Hydrocarbons (mg/kg)													
Diesel Range Organics	492 U	3,590	68,200	17,800	567 J	416 J	952 U	52,700	152,000	6,340	2,280 J	--	--
Residual Range Organics	5,650	6,880	43,500	26,800	2,420	4,300	4,260	92,900	160,000	12,700	8,080	--	--
Polychlorinated Dibenzo-p-dioxins and Dibenzofurans (ng/kg)													
1,2,3,4,6,7,8-HpCDD	7,370	-	22,100	122,000	70,600	-	-	-	3,550	5,400	-	--	690
1,2,3,4,6,7,8-HpCDF	650	-	894	5,300	4,660	-	-	-	1,330	710	-	--	880
1,2,3,4,7,8,9-HpCDF	60.3	-	94.1	585	557	-	-	-	277	410	-	--	690
1,2,3,4,7,8-HxCDD	36.5	-	76.5	287	145	-	-	-	121	337	-	--	--
1,2,3,4,7,8-HxCDF	88.1	-	197	612	240	-	-	-	612	390	-	--	2.70
1,2,3,6,7,8-HxCDD	235	-	699	3,790	1,440	-	-	-	614	1,530	-	--	--
1,2,3,6,7,8-HxCDF	51.8	-	145	380	170	-	-	-	329	563	-	--	2.70
1,2,3,7,8,9-HxCDD	140	-	384	1,600	1,250	-	-	-	525	1,410	-	--	--
1,2,3,7,8,9-HxCDF	1.68 J	-	2.76	14.8	13.5	-	-	-	7.17	19.1 U	-	--	2.70
1,2,3,7,8-PeCDD	29.7	-	84.6	225	131	-	-	-	55.7	246	-	--	2.60
1,2,3,7,8-PeCDF	17.23	-	54.0	104	33.2	-	-	-	17	48.6	-	--	2.60
2,3,4,6,7,8-HxCDF	57.5	-	180	549	124	-	-	-	229	234	-	--	2.70
2,3,4,7,8-PeCDF	210	-	633	1,69	570	-	-	-	167	609	-	--	0.0300
2,3,7,8-TCDD	66.7	-	39.7	608	19.1	-	-	-	245	2,040	-	9.00	0.00910
2,3,7,8-TCDF	374	-	125	98.4	48.8	-	-	-	169	150	-	--	0.770
OCDD	38,000	-	113,000	557,000	711,000	-	-	-	23,800	33,300	-	--	23,000
OCDF	3,180	-	2,290	7,690	11,500	-	-	-	2,950	3,180	-	--	23,000
Total PCDD/F	67,100 JT	-	163,000 JT	685,000 JT	802,000 JT	-	-	-	35,700 JT	60,400 JT	-	--	--
Total TCDD TEQ	288 JT	-	654 JT	2,990 JT	1,490 JT	-	-	-	280 JT	5,740 JT	-	9.00	0.00910
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene[1]	0.480 U	0.367 U	1.27 J	6.91 J	0.0627 U	1.00 U	0.504 U	3.79 U	1.16 U	0.306 U	0.411 J	--	--
2-Chloronaphthalene[1]	0.480 U	0.367 U	0.840 U	0.835 U	0.0627 U	1.00 U	0.504 U	3.79 U	1.16 U	0.306 U	0.237 U	--	--
Benzo(e)pyrene[1]	12.4 J	1.00 J	J	2.02 J	0.235 J	4.74 J	2.28 J	J	2.32 UJ	2.35 J	2.44 J	--	--
Carbazole[1]	0.480 U	0.367 U	0.840 U	0.835 U	0.0627 U	1.00 U	0.504 U	3.79 U	3.96	0.306 U	0.237 U	1.60	--
Dibenzofuran[1]	0.480 U	0.367 U	0.840 U	1.27 J	0.0627 U	1.00 U	0.504 U	3.79 U	1.16 U	0.306 U	0.340 J	--	--
Perylene[1]	3.41 J	0.734 UJ	1.68 UJ	1.67 UJ	0.125 UJ	2.01 UJ	1.01 UJ	7.58 UJ	2.32 UJ	0.611 UJ	0.815 J	--	--
HPAHs (LWG Convention)													
Benzo(a)anthracene	18.8	0.441 J	0.840 U	0.891 J	0.143	0.76	2.27	3.79 U	1.16 U	0.608 J	2.15	1.05	--
Benzo(a)pyrene	20.5	0.612 J	1.02 J	0.871 J	0.152	4.35	1.74	5.93	1.53	1.06	2.50	1.45	--
Benzo(b)fluoranthene	16.8 J	1.02	0.840 U	1.92 J	0.202	6.04	3.05 J	3.79 U	1.26 J	1.82	3.03	--	--
Benzo(g,h,i)perylene	8.75	0.706 U	0.840 U	0.988 J	0.186	3.58	1.63	3.79 U	1.63	2.09	2.09	0.300	--
Benzo(k)fluoranthene	5.64 J	0.367 U	0.840 U	0.835 U	0.0668 J	1.77 J	0.958 J	3.79 U	1.16 U	0.428 J	0.972	13.0	--
Chrysene	21.2	1.10	0.840 U	1.68	0.170	5.13	0.350	3.79 U	2.84	1.15	3.51	1.28	--
Dibenz(a,h)anthracene	2.49	0.367 U	0.840 U	0.835 U	0.0627 U	1.00 U	0.504 U	3.79 U	1.16 U	0.397 J	0.445 J	1.30	--
Fluoranthene	27.0	1.14	1.12 J	1.86	0.273	8.49	4.90	3.79 U	1.83 U	0.767	3.34	2.23	37.0

O:\25897063 PGE Env Services Phase 25000 Technical\Tk 5 Hawthorne Building\Hawthorne Building Data Report\Tables\Tables 3 through 6_Hawthorne.xls

concentration in the grab sample from this manhole (58,000 µg/Kg) is high relative to the range of concentrations detected for basins discharging to the Portland Harbor, based on sediment trap data collected by the Lower Willamette Group and others (Anchor and Integral, 2008).

- **Metals:** Metals results for the samples included exceedances of the SLVs for cadmium, copper, lead, mercury, nickel and/or zinc in all 11 samples analyzed. Lead concentrations in grab samples from several locations (including manhole ABU882 and locations near the former Rexel Taylor site), and mercury concentrations in the upstream and downstream sediment trap locations, are high relative to the harborwide concentration ranges for these metals (Anchor and Integral, 2008). Concentrations of other metals in all samples are within an order-of-magnitude of the respective SLVs and are not considered significantly elevated.
- **PAHs:** PAH concentrations in the samples are relatively low. Five individual PAHs exceeded the respective SLVs in one or more samples, but the concentrations were all less than one order-of- magnitude greater than the SLVs. Total PAHs concentrations in the samples are low relative to the harborwide concentration range (Anchor and Integral, 2008).
- **Phthalates:** BEHP exceeded the SLV in all samples tested for phthalates, and di-n-butyl phthalate also exceeded the SLV in two of the samples. The highest BEHP concentrations were detected in the samples from catch basins ANY616 and AEE077 (both located at the intersection of SE Market Street and SE 2nd Avenue, near the southwest corner of the former Rexel Taylor building); these concentrations are elevated relative to the harborwide concentration range (Anchor and Integral, 2008).

Data Evaluation and Potential Sources

PCBs, metals (lead and mercury), and BEHP are present at elevated levels in inline solids within some parts of the Basin 33 conveyance system. A spatial evaluation of PCBs, metals, and BEHP concentrations, in the context of known and suspected sources, is provided below.

PCBs

The only sampling location that yielded stormwater solids with significantly elevated PCBs concentrations is manhole ABU929, located near the outfall; PCBs either were not detected or were detected at relatively low concentrations at all other basin sampling locations. Given that the SE Clay Street stormwater line, including the location of manhole ABU929, was cleaned in 2006, the 2009/2010 sampling results indicate a potential ongoing source of PCBs to this location. The total PCBs concentration in the May 2010 sediment trap sample (which may be more representative of current basin discharges) was significantly lower than the concentration in the August 2009 inline solids grab sample; however, total PCBs concentrations in both samples from this location are elevated. Potential sources connected to the OF 33 stormwater conveyance line between the sediment trap samples collected in the lower basin (manhole ABU929) and mid basin (manhole ABU883) include the Holman Building site, PCC, and PGE's Hawthorne Building (see Figure 1).

Information on the properties within Basin 33 was compiled for PGE's recent Preliminary Assessment (PA) of Basin 33 (URS, 2010b). The Holman Building site was developed in the early 1900s, but information to clarify the operational history for the site was not identified during

Table 2. Basin 33 Inline Solids Grab Sample Locations.

Location	Storm System ID No.	Asset Type	Description	Date Sampled
SE 2nd Ave.	ANY616	CB	Approximately 10" of solids in catch basin. Sample collected below filter fabric present at time of sampling.	8/07/09
	ABU893	MH	Solids approximately 0.5 inches thick within the manhole. Sample collected in the 10-inch-diameter line connecting from catch basin AEE077.	11/10/09
SE Market St.	AEE077	CB	Composite sample collected from the approximate 2.5 feet of solids in the catch basin below the filter fabric present at the time of sampling. Catch basin approx. 90 feet downslope of the former transformers at Rexel Taylor facility.	8/04/09
SE Clay St	ABU888	MH	Limited solids present in manhole and associated pipes. Solids collected on the downstream side of the manhole diversion structure.	8/04/09
	AEE063	CB	Approximately 0.5" of solids in catch basin.	11/10/09
	ABU887	MH	No solids present.	NS
	ABU883	MH	Solids ranged from approximately 1 – 3 inches thick within the manhole.	8/04/09
	AEE059	CB	Approximately 14" of solids in catch basin. Composite sample consisting of 3 subsamples was collected.	11/10/09
	ABU882	MH	Solids present in 16" diameter inlet from the east-northeast (connection from manhole ABU883).	11/10/09
	AEE055	CB	Up to 14" of solids in catch basin. Composite sample consisting of 3 subsamples was collected.	11/10/09
	ABU881	MH	Composite sample collected from small pockets of sediments up to 0.5 inches thick.	8/04/09
	ABU929	MH	Solids present in small pockets up to 0.25 inches thick.	8/05/09
SE Water Ave	ABU941	MH	Solids ranged from approximately 1.5 – 2.5 inches thick within the manhole.	8/04/09
	ABU873	MH	No solids present.	NS
	ABU869	MH	No solids present.	NS

Notes:

MH = Manhole; CB = Catch basin; NS = No sample- insufficient solids available to sample
Additional sampling details are provided in Attachment D.

Conclusions and Next Steps

The analytical data for the stormwater solids samples collected by the City in Basin 33 indicate the presence of PCBs, lead, mercury, and BEHP sources to the City's conveyance system. PCBs (Aroclor 1260) were detected at a significantly elevated concentration only in solids collected from the most downstream sampling location, adjacent to the Holman Building property and just downstream of the PGE Hawthorne Building. Available data collected as part of PGE's Upland Assessment at the PGE Hawthorne Building site indicates PCBs (predominantly Aroclor 1260) are present at significantly elevated concentrations at this site, including in onsite catch basins currently connected to the City's stormwater conveyance system Currently available information indicates the Hawthorne Building and the former Rexel Taylor site may be sources of lead and mercury to the system, but additional unknown sources also may be contributing to high concentrations of these metals detected in stormwater solids from the basin. The highest BEHP concentrations in the Basin 33 conveyance system were detected in samples from catch basins near the location of the former Rexel Taylor building; the high BEHP concentrations in these samples may be related to debris originating from the site when the building burned in 2006, or may be associated with BEHP-contaminated surface soil/debris recently documented at this site.

PGE is currently assessing whether the Hawthorne Building (*Hawthorne Building Upland Site Assessment Work Plan* (URS, 2010e, 2010f)) and the Rexel Taylor (*Rexel Taylor Upland Site Assessment Sampling and Analysis Plan* (URS, 2010c, 2010d)) properties have contributed to Willamette River sediment contamination. The data reports for both Upland Assessments have recently been completed (URS, 2010a; 2010g), and the results indicate PCBs, metals, and other contaminants are present and have current pathways from these sites to the river via the Basin 33 stormwater conveyance system. The results will be evaluated as part of PGE's planned remedial investigation report for the basin (URS, 2010a). The results of the PGE remedial investigation will be reviewed by DEQ, when completed, to determine whether additional source investigation activities or source control measures are required for discharges to the City's Basin 33 stormwater conveyance system.

References

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BES. 2008. RE: Results of Environmental Sampling and Analysis for the PCC Stormwater Project at 1626 SE Water Avenue; BES Project 8693. City of Portland Bureau of Environmental Services, Memorandum to A. Meyers and S. Nelson-Deal from J. O'Donovan (BES). July 29, 2008.

Table 6. Basin 33 Inline Solids Sample Results.

Upstream → Downstream

Class Analyte	Units	MH ABU888		CB AMY416	CB ABE077	MH ABU893	CB ABE063	MH ABU883	CB ABE059	MH ABU882		CB ABE055	MH ABU941	MH ABU881	MH ABU929		DEQ Screening Level Value [1] *
		33_1 FO095788 Inline Solids 8/4/2009	33_STI FO105538 Sediment Trap 5/6/2010	33_7 FO095794 Inline Solids 8/5/2009	33_3 FO095788 Inline Solids 8/4/2009	33_5 FO096147 Inline Solids 11/10/2009	33_8 FO096166 Inline Solids 11/10/2009	33_3 FO095790 Inline Solids 8/4/2009	33_10 FO096168 Inline Solids 11/10/2009	33_11 FO096169 Inline Solids 11/10/2009	33_STI FO105539 Sediment Trap 5/6/2010	33_12 FO096170 Inline Solids 11/10/2009	33_5 FO095793 Inline Solids 8/4/2009	33_4 FO095791 Inline Solids 8/4/2009	33_6 FO095795 Inline Solids 8/5/2009	33_STI FO105540 Sediment Trap 5/6/2010	
Total Organic Carbon (EPA 9060 MOD)																	
TOC	mg/kg	58,300	116,000	103,000	88,800	NA	NA	13,700	NA	NA	80,900	NA	13,100	42,900	42,100	72,900	-
Total Solids (SM 2540 G)																	
TS	% W/W	75.0	37.5	33.7	81.5	37.1	70.9	30.6	54.3	78.4	44.3	36.5	86.3	40.0	53.0	41.7	-
Metals (EPA 6000/7000)																	
Aluminum (EPA 6010)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-
Antimony	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44
Arsenic	mg/kg	4.92	3.30	4.68	2.12	4.39	4.63	NA	1.88	3.27	4.18	[redacted]	NA	NA	NA	3.46	37
Cadmium	mg/kg	0.84	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	NA	0.66	0.49	[redacted]	[redacted]	NA	NA	NA	[redacted]	1
Chromium	mg/kg	48.8	30.6	84.0	37.1	50.7	47.3	NA	35.7	38.6	37.4	141.8	NA	NA	NA	49.0	111
Copper	mg/kg	140	124	[redacted]	[redacted]	[redacted]	[redacted]	NA	84.9	84.9	119	[redacted]	NA	NA	NA	123	149
Lead	mg/kg	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	NA	[redacted]	[redacted]	[redacted]	[redacted]	NA	NA	NA	[redacted]	17
Mercury	mg/kg	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.020	NA	0.055	[redacted]	[redacted]	[redacted]	NA	NA	NA	[redacted]	0.03
Nickel	mg/kg	34.4	34.6	38.3	33.6	36.9	48.4	NA	34.5	31.3	41.2	[redacted]	NA	NA	NA	37.0	48.6
Selenium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2
Silver	mg/kg	0.33	0.39	0.36	0.25	0.22	0.23	NA	0.10 U	0.24	0.50	0.79	NA	NA	NA	0.35	3
Zinc	mg/kg	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	NA	434	316	[redacted]	[redacted]	NA	NA	NA	[redacted]	459
Polychlorinated Biphenyls (PCBs) (EPA 8082)																	
Aroclor 1016/1242	µg/kg	10 U	10 U	30 U[10]	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	20 U[6]	20 U[6]	25 U	330
Aroclor 1221	µg/kg	20 U	20 U	60 U[10]	20 U	20 U	20 U	20 U	20 U	20 U	40 U	20 U	20 U	40 U[6]	40 U[6]	40 U	-
Aroclor 1232	µg/kg	10 U	10 U	30 U[10]	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	20 U[6]	20 U[6]	20 U	-
Aroclor 1248	µg/kg	10 U	10 U	30 U[10]	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	20 U[6]	20 U[6]	20 U	1,500
Aroclor 1254	µg/kg	28 [8]	10 U	30 U[10]	44 [8]	10 U	10 U	10 U[6]	10 U	10 U	20 U	24	10 U	20 U[6]	20 U[6]	20 U	300
Aroclor 1260	µg/kg	34 [8]	10 U	30 U[10]	59 [8]	10 U	38	13	10 U	10 U[10]	20 U	10 U	10 U	20 U[6]	[redacted]	[redacted]	230
Aroclor 1262	µg/kg	10 U	10 U	30 U[10]	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	20 U[6]	20 U[6]	20 U	-
Aroclor 1268	µg/kg	10 U	10 U	30 U[10]	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	20 U[6]	20 U[6]	20 U	-
Total PCBs	µg/kg	[redacted]	ND	ND	[redacted]	ND	[redacted]	[redacted]	ND	ND	ND	[redacted]	ND	ND	[redacted]	[redacted]	0.39
Polynuclear Aromatic Hydrocarbons (EPA 8310C SIM)																	
1-Methylnaphthalene	ug/kg	NA	838 U	NA	NA	NA	NA	NA	NA	NA	659 J	NA	NA	NA	NA	414	-
2-Methylnaphthalene	ug/kg	NA	448 U	NA	NA	NA	NA	NA	NA	NA	[redacted]	NA	NA	NA	NA	[redacted]	200
Acenaphthene	ug/kg	333 U	448 U	220 U	83 U	122 U	93.8 U	NA	87.3 U	34.5 U	931 U	93.5 U	NA	NA	NA	382 U	300
Acenaphthylene	ug/kg	333 U	448 U	220 U	83 U	122 U	93.8 U	NA	87.3 U	34.5 U	931 U	93.5 U	NA	NA	NA	382 U	200
Anthracene	ug/kg	333 U	343 J	220 U	83 U	122 U	93.8 U	NA	87.3 U	34.5 U	931 U	93.5 U	NA	NA	NA	192 J	843
Benzo(a)anthracene	ug/kg	333 U	622 J	343	83 U	267	154	NA	87.3 U	147	332 J	248	NA	NA	NA	373 J	1,050
Benzo(b)pyrene	ug/kg	333 U	489 J	251	83 U	336	195	NA	98.9	116	245 J	322	NA	NA	NA	306 J	1,450
Benzo(b)fluoranthene	ug/kg	333 U	494 J	361	97	358	271	NA	138	123	396 J	491	NA	NA	NA	376 J	-
Benzo(g,h,i)perylene	ug/kg	[redacted]	[redacted]	[redacted]	118	[redacted]	225	NA	177	78.3	[redacted]	[redacted]	NA	NA	NA	[redacted]	500
Benzo(k)fluoranthene	ug/kg	333 U	343 J	236	83 U	318	148	NA	87.3 U	107	286 J	280	NA	NA	NA	224 J	13,000
Chrysene	ug/kg	343	571	383	117	443	278	NA	190	191	573 J	481	NA	NA	NA	724	1,290
Dibenzo(a,h)anthracene	ug/kg	333 U	333 J	220 U	83 U	122 U	93.8 U	NA	87.3 U	34.5 U	393 J	108	NA	NA	NA	[redacted]	1,000
Dibenzofuran	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-
Fluoranthene	ug/kg	333 U	1,880	782	117	[redacted]	293	NA	370	409	1780	330	NA	NA	NA	1350	2,330
Fluorene	ug/kg	333 U	340 J	220 U	83 U	122 U	93.8 U	NA	87.3 U	34.5 U	931 U	93.5 U	NA	NA	NA	95.3 J	536
Indeno(1,2,3-cd)pyrene	ug/kg	333 U	[redacted]	220 U	83 U	[redacted]	[redacted]	NA	87.3 U	61.7	[redacted]	[redacted]	NA	NA	NA	[redacted]	100
Naphthalene	ug/kg	333 U	176 J	220 U	83 U	122 U	93.8 U	NA	87.3 U	54.6	474 J	93.5 U	NA	NA	NA	358	561
Phenanthrene	ug/kg	333 U	1,122	767	104	1,140	160	NA	302	161	600 J	133	NA	NA	NA	699	1,170
Pyrene	ug/kg	346	1,422	719	133	1,318	224	NA	350	210	1,340	224	NA	NA	NA	1,040	1,320
Total PAHs	ug/kg	938	9,551	4,330	741	7,248	2,139	NA	1,451	1,171	10,082	3,364	NA	NA	NA	9,634	-
Phthalates (EPA 8270C/8270-SIM)																	
Bis(2-ethylhexyl) phthalate (BEHP)	µg/kg	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	NA	[redacted]	[redacted]	[redacted]	[redacted]	NA	NA	NA	[redacted]	330
Butyl Benzyl Phthalate	µg/kg	2,330 U	2,070	4,400 U	1,660 U	1,220 U	983	NA	2,210	551	1,892	748 U	NA	NA	NA	3,148	-
Diethyl phthalate	µg/kg	2,330 U	1,380 U	4,400 U	1,660 U	1,220 U	766 U	NA	699 U	138 U	1,840 U	748 U	NA	NA	NA	764 U	400
Dimethyl phthalate	µg/kg	2,330 U	1,380 U	4,400 U	1,660 U	1,220 U	766 U	NA	699 U	138 U	1,840 U	748 U	NA	NA	NA	764 U	-
Di-n-butyl phthalate	µg/kg	2,330 U	1,380 U	4,400 U	1,660 U	1,220 U	[redacted]	NA	699 U	138 U	1,840 U	748 U	NA	NA	NA	[redacted]	60
Di-n-octyl phthalate	µg/kg	2,330 U	30,000	4,400 U	1,660 U	1,220 U	766 U	NA	1,020 U	699 U	16,200	748 U	NA	NA	NA	8,720	-

Notes:

CB = Catch basin MH = manhole

NA = Not analyzed ND = Not detected

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

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

- = No DEQ screening level available

ug/kg = Micrograms per kilogram

mg/kg = Milligrams per kilogram

[1] DEQ = Oregon Department of Environmental Quality. Screening Level Values (SLVs) established in DEQ's "Guidance for Evaluating the Stormwater Pathway at Upland Sites" (DEQ, 2009).

[8] Reported values for PCB Aroclors 1254 and 1260 may be affected by non-target interference

[10] Reporting limits for PCB Aroclors are raised due to low solids content of the sample

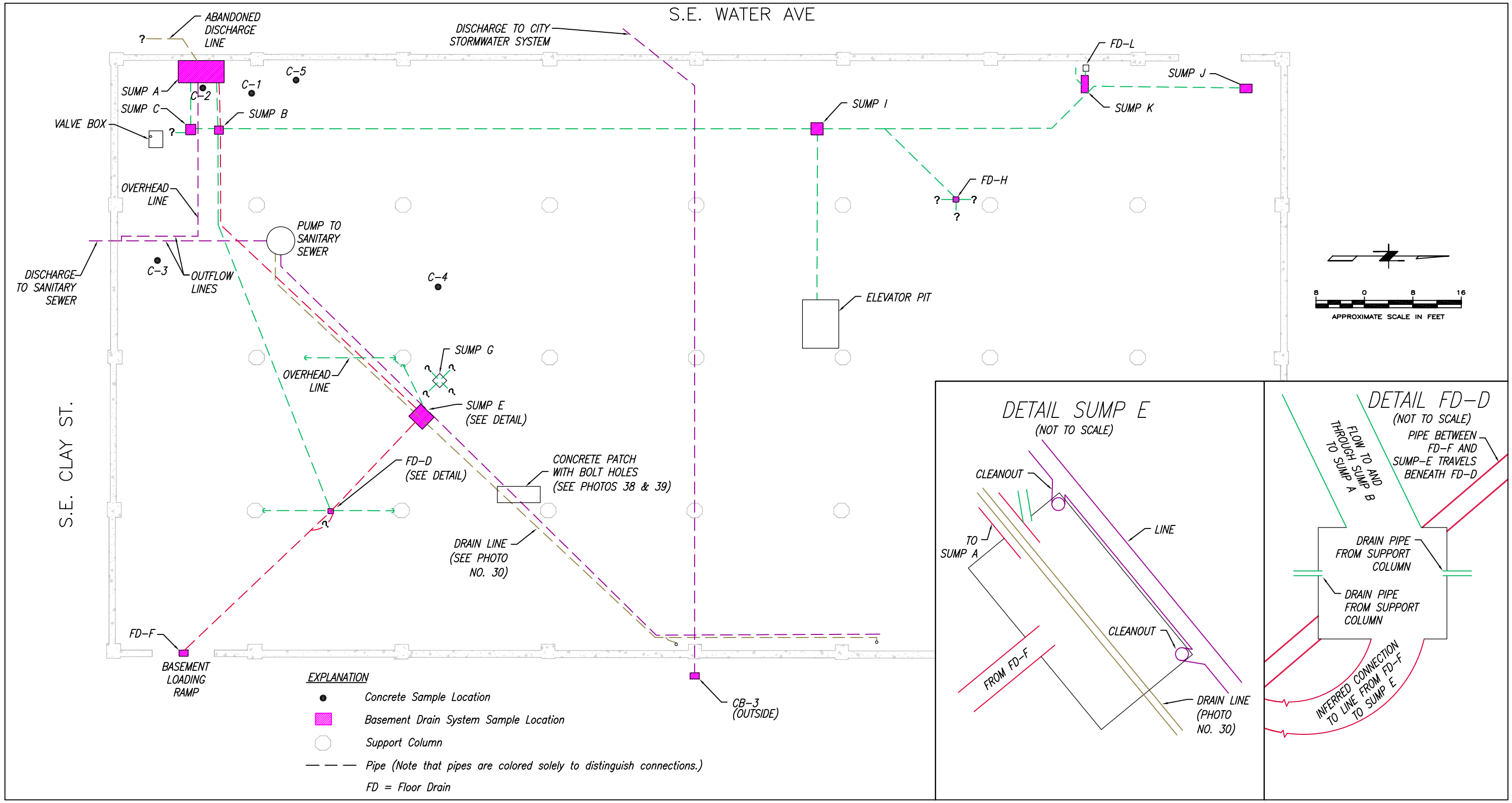
[6] These level of PCB Aroclor 1254 may be present but is not clearly distinguishable due to non-target interference

[3] Analysis for PCB detected a pattern that appears to be Aroclor 1260 but at a concentration less than the method reporting limit (MRL)

(*) Sample was re-analyzed for PCB Aroclors on 8/3/09 and the re-analysis result for Aroclor 1260 was 61,200 ug/kg

(*) Sample was verified by duplicate analysis, duplicate result for Aroclor 1260 was 283 ug/kg

[redacted] = Concentration exceeds DEQ Screening Level Value



DRAINAGE STRUCTURES

PORTLAND GENERAL ELECTRIC
1510 SE WATER AVE
PORTLAND, OREGON

MAY 2011
25697439

URS

FIGURE 2

K:\25697063_PGE_Env_Services_Phase_2\GIS Figures\MXD\Hawthorne\Disclosure_Questionnaire\Fig2 Drainage Structures.dwg May 18, 2011 - 1:17pm