Lower Duwamish Waterway Source Control Status Report September 2008 through June 2009

August 2009

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Lower Duwamish Waterway Source Control Status Report September 2008 through June 2009

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Executive Summary

This report summarizes source control activities conducted by the Lower Duwamish Waterway (LDW) Source Control Work Group between September 1, 2008 and June 30, 2009. Previous status reports ((Ecology 2007b), (Ecology 2008a), (Ecology 2008e)) provided an overview of the LDW site, the strategy for controlling sources of pollutants to the LDW, the process for developing Source Control Action Plans (SCAPs), the methods and process for implementing SCAPs, issues associated with permitted discharges, and a summary of source control actions conducted between 2003 and August 2008. This current report updates this information, including:

- Updated SCAP publication and implementation schedule;
- Status of business inspections, other source tracing activities, site assessments and cleanups, and other source control activities described in previous status reports;
- Public involvement and outreach activities during the subject time period; and
- Source control activities conducted between September 2008 and June 2009 at each of the identified source control areas, including the seven Early Action Areas (EAAs).

Source Control Action Plans

Since publication of the previous Source Control Status Report, reports summarizing existing information were completed for the following source control areas: River Mile (RM) 0.0-0.1 East (Spokane Street to Ash Grove Cement), RM 1.2-1.7 East (St. Gobain to Glacier Northwest), RM 1.7-2.9 East (Slip 2 to Slip 3), and RM 0.9-1.0 East (Slip 1). These reports, known as Data Gaps Reports, were used to prepare SCAPs for these source control areas.

During the current reporting period (September 2008 through June 2009), SCAPs were published for the following eight source control areas: EAA-6 (Boeing Isaacson/Central King County International Airport [KCIA]), RM 0.0-0.1 East (Spokane Street to Ash Grove Cement), RM 0.9-1.0 East (Slip 1), RM 1.2-1.7 East (St. Gobain to Glacier Northwest), RM 1.7-2.0 East (Slip 2 to Slip 3), RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works), RM 2.3-2.8 East (Seattle Boiler Works to Slip 4), and RM 3.7-3.9 East (Slip 6).

A total of 457 source control action items have been identified based on the 15 SCAPs published as of June 30, 2009; 111 of these action items have been completed, and 4 are not needed or have been combined with another action item (a total of 25 percent). Of the remaining 342 action items, 113 (33 percent of the remaining action items) are considered high priority (to be completed prior to sediment cleanup), 162 (47 percent) are medium priority (to be completed prior to or concurrent with sediment cleanup), and 67 (20 percent) are low priority (ongoing actions or actions to be completed as resources become available). The current status of action items is shown in Figure ES-1.

The action item tally presented above reflects a net increase of 199 action items during the current reporting period as a result of the completion of eight SCAPs as listed above. A total of

RM 0–0.1 East
Spokane St. to Ash Grove Cement

EAA-1
RM 0.1–0.9 East
Duwamish/Diagonal Way

RM 0–1.0 West
Spokane St. to Kellogg Island

RM 0.9–1.0 East
Slip 1

RM 1.0–1.2 East
KC lease parcels

RM 1.0–1.3 West
Kellogg Island to Lafarge Cement

RM 1.3–1.6 West
Glacier Bay

RM 1.2–1.7 East
St. Gobain to Glacier Northwest

RM 1.7–2.0 East
Slip 2 to Slip 3

RM 1.6–2.1 West
Terminal 115

RM 2.0–2.3 East
Slip 3 to Seattle Boiler Works

RM 2.3–2.8 East
Seattle Boiler Works to Slip 4

EAA-2
RM 2.1–2.2 West
Trotsky Inlet

EAA-3
RM 2.8 East
Slip 4

RM 2.2–3.4 West
Riverside Drive

EAA-4
RM 2.8–3.7 East
Boeing Plant 2 to Jorgensen Forge

EAA-5
RM 3.4–3.8 West
Terminal 117

EAA-6
RM 2.7–2.9 East
Boeing Isaacson/
Central KCIA

RM 3.9–4.3 East
Slip 6

RM 3.8–4.2 West
Sea King Industrial Park

RM 4.3–4.9 East
Boeing Developmental Center

EAA-7
RM 4.9 East
Norfolk CSO/SD

RM 4.2–4.8 West
Restoration Areas

E Marginal Way S
1st Ave S
SW Spokane St
W Marginal Way SW
I-5
Beacon Ave S
WA 99
WA 509

This figure shows the status of action items as of June 30, 2009. Pie charts are shown for those source control areas with completed Source Control Action Plans.

Numbers on the pie charts indicate the number of action items in each of the following four categories:

Gray—Completed action items
Orange—Incomplete action items, high priority
Yellow—Incomplete action items, medium priority
Green—Incomplete action items, low priority

The sum of the numbers in the pie chart for a source control area represents the total number of action items identified for that source control area. The size of a “slice” in the pie chart represents the proportion (or percentage) of the action items for that source control area. For example, at EAA-1, a total of 29 action items were identified: 18 of 29 (or 62 percent) are complete, 2 of 29 (or 7 percent) are incomplete and high priority, 4 of 29 (or 14 percent) are incomplete and medium priority, and 5 of 29 (or 17 percent) are incomplete and low priority.

Key

High Priority Action Items | Completed Action Items
Medium Priority Action Items | Low Priority Action Items

Figure ES-1. Status of Source Control Action Items Through June 2009

0 850 1,700 3,400 5,100 6,800 Feet

WA State Plane North
NAD83

N

SAIC From Science to Solutions

L. Delwiche, SAIC 2008

35 action items were completed during this period. Additional action items will be identified as SCAPs are completed for the remaining eight source control areas. High priority action items which are not yet complete, as identified in or subsequent to SCAPs completed through June 2009, are listed in Table ES-1 at the end of this section.

Source Control Implementation

Business inspection and source tracing efforts continue. Under the Urban Waters Initiative, inspectors from the Washington Department of Ecology's (Ecology) Water Quality (WQ) and Hazardous Waste Treatment and Reduction (HWTR) programs, together with Seattle Public Utilities (SPU) inspectors and Toxics Cleanup Program (TCP) staff, have developed a master list of facilities, priorities for coordinating inspections and avoiding overlap, and a multimedia Source Control Checklist that is being used during source control inspections. SPU conducted 131 inspections at 72 facilities between September 2008 and June 2009, and Ecology has conducted or participated in over 160 inspections during this period.

Source tracing activities are continuing, including collection of sediment trap samples, catch basin samples, and in-line solids samples. Through an interagency agreement between Ecology and SPU, sediment traps were installed at an additional 20 locations in the LDW study area. Sediment trap samples were collected in March-April 2009, and results are presented in Section 3.2.2 and Appendix E. In addition, SPU collected 119 in-line, catch basin, and dirt samples between November 2008 and March 2009 under the interagency agreement. The catch basin and in-line sampling has helped to identify a number of pollutant sources to the LDW, as described in Section 3.2.3.

Site characterization or cleanup is in progress at several facilities that are known or suspected threats to LDW sediments. Terminal 117, Rhone-Poulenc, and Boeing Plant 2 (which includes part of Jorgensen Forge) are being managed by the U.S. Environmental Protection Agency (EPA). Ecology is managing the following sites under the Model Toxics Control Act (MTCA): Industrial Container Services/Trotsky Property, North Boeing Field-Georgetown Steam Plant, Crowley Marine Services, Jorgensen Forge (upland portion), Boeing Isaacson/Thompson, Fox Avenue Building, 8801 Site (former PACCAR), Duwamish Shipyard, Glacier Northwest/Reichhold Chemical, and Terminal 115 North.

Site characterization or cleanup is also in progress at several facilities that are known or suspected threats to human health or the environment, but are not necessarily a source of contaminants to LDW sediments. Cleanup at the former Boeing Electronics Manufacturing Facility (EMF) is being managed by EPA. Ecology is managing the following sites under MTCA: Philip Services - Georgetown, General Electric – Dawson Street Plant, Capital Industries, Art Brass Plating, Blaser Die Casting, and South Park Landfill.

Ecology contractors have sampled soil, groundwater, and sediment at Industrial Container Services (formerly Northwest Cooperage) and Douglas Management Company properties, soil, groundwater and bank soils at South Park Marina, and soil and groundwater at Basin Oil Company.

Ecology has updated the assumptions and long-term projection for implementing source control. The schedule for river-wide source control continues to be dependent on the time and resources needed to conduct cleanup at contaminated upland sites. Additional upland sites that may require site assessment and cleanup continue to be identified as additional SCAPs are completed. Ecology's TCP currently has four full-time site managers dedicated to contaminated upland sites in the LDW. The schedule assumes that a fifth full-time site manager will be added in October 2010.

The long-term schedule projection for implementing source control assumes that up to 21 upland contaminated cleanup sites will be identified for which Ecology will need to assign one of its full-time site managers. Work has started at eight of these sites. The projected schedule estimates that source control from all 21 potentially contaminated upland sites could be implemented by March 2019.

Source Control Activities

Major source control actions completed during September 2008 through June 2009, in addition to the business inspections and source tracing described above, are summarized below.

EAA-1 (Duwamish/Diagonal Way)

- The Port of Seattle submitted the final *Terminal 108 – Environmental Conditions Report* in January 2009. The Port is continuing to develop Source Control Strategy Plans for the Eastern and Western parcels.
- Five groundwater monitoring wells were installed and sampled by the property owner at the former Janco-United/Lennox Industries site; preliminary results indicate chemical concentrations are below MTCA cleanup levels.
- SPU resampled catch basin 37 on Airport Way S, in front of the Rainier Commons property. The polychlorinated biphenyl (PCB) concentration (0.5 mg/kg dry weight [DW]) was significantly lower than during previous sampling events (2.3 – 17.5 mg/kg DW).
- EPA performed a PCB compliance inspection at Rainier Commons in March 2009; paint samples and paint chips were collected and analyzed. PCBs were detected at up to 10,000 mg/kg DW in the paint samples. A storm drain solids sample collected between Buildings 3 and 13 at the site contained 105 mg/kg DW PCBs.
- Rainier Commons LLC prepared a Cleanup Action Plan to remove PCB-containing paint from building exteriors and the storm drain system. Cleanup action is scheduled to begin in 2009.

EAA-2 (Trotsky Inlet)

- Negotiations are continuing on an Agreed Order to conduct an RI/FS and prepare a draft Cleanup Action Plan at the Industrial Container Services/Trotsky property.

- Puget Sound Clean Air Agency (PSCAA) and Ecology conducted an inspection at Industrial Container Services on April 23, 2009. The inspection identified potential improper disposal of drum residues.
- An Ecology contractor (Science Applications International Corporation [SAIC]) sampled five new and four existing groundwater monitoring wells at the Douglas Management Company property in June 2008. Soil samples were collected from the borings, and bank soils were collected adjacent to the Trotsky Inlet. A data report (*Summary of Additional Site Characterization Activities: Trotsky and Douglas Management Company Properties*) was completed in May 2009. The report also contains additional information on the Industrial Container Services site as an update to a July 2007 data report.
- In May 2009, SAIC prepared a Supplemental Data Gaps Report for the Douglas Management Company property, based on a review of relevant responses to EPA's Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 104(e) Request for Information letters. The report identified several additional data gaps and action items related to potential stormwater, surface runoff, and groundwater contaminant pathways to the LDW.
- In June 2009, SAIC prepared a Supplemental Data Gaps Report for the Boyer Towing/Boyer Logistics property, based on a review of relevant responses to EPA's CERCLA 104(e) Request for Information letters. Additional data gaps and source control action items were identified.

EAA-3 (Slip 4)

- Ecology and Crowley Marine Services began negotiating an Agreed Order to investigate contamination at the property in August 2008; an Agreed Order was signed in July 2009.
- Work on replacement of the Georgetown Steam Plant (GTSP) flume is continuing. Seattle City Light (SCL) submitted a final *GTSP Flume Outfall Work Plan* in October 2008, and work was scheduled for March through September 2009.
- King County cleaned catch basins on the east and west sides of KCIA in September and November 2008, respectively. Catch basins in the central portion will be cleaned in 2009.
- An Agreed Order for the North Boeing Field (NBF)/GTSP Site was signed by the Potentially Liable Parties (PLPs) (Boeing, City of Seattle, King County) and Ecology, with an effective date of August 14, 2008. Ecology held a public meeting on September 18 at the South Seattle Community College to solicit public comments. Under the terms of the Order, Ecology will complete a Remedial Investigation/Feasibility Study (RI/FS) and conduct one or more interim actions, if appropriate, at the NBF-GTSP Site.
- A Boeing contractor (Landau Associates) conducted an investigation of potential PCB sources to Slip 4 in September 2008. A total of 53 soil borings were advanced at the GTSP, and 61 soil samples were collected. PCBs were detected in nine samples with concentrations ranging from 0.037 to 6.2 mg/kg DW. Samples were also collected in the GTSP building, the condenser pit, and the discharge tunnel. Total PCBs in the discharge tunnel were 23.4 to 28 mg/kg DW. Soil samples were also collected at NBF, west of the GTSP and adjacent to a newly installed storm drain line. PCBs were detected up to 270 mg/kg DW in borings near the NBF-GTSP property line.

- In late 2008, Boeing repaired a section of storm drain line in the Apron A/B flight line areas, after a video inspection revealed the presence of a degraded corrugated metal pipe. Soil samples in this area contained 2.2 to 7.5 mg/kg DW PCBs.
- In November 2008, Landau Associates (for Boeing) collected solids samples from the north lateral storm drain line at NBF. PCB concentrations ranged from 0.041 to 4.6 mg/kg DW.
- Ecology contractor SAIC completed a draft Supplemental Data Gaps Report in April 2009; the final report is scheduled to be completed in August 2009.
- SAIC has prepared a Sampling and Analysis Plan to conduct stormwater and filtered suspended solids sampling at two locations at NBF. Sampling is anticipated to begin in September 2009.

EAA-4 (Boeing Plant 2/Jorgensen Forge)

- In October 2008, Golder Associates (for Boeing) prepared a Phase 2 Report and Work Plan for characterizing the joint caulk material in outdoor concrete pavement at Boeing Plant 2. The report describes the caulk mapping, sampling, and analysis. A total of 107 caulk samples were collected.
- Jorgensen Forge completed well drilling for the data gaps investigation required by the Agreed Order; wells will be sampled for four quarters.
- Ecology's WQ Program issued a Notice of Violation in November 2008 to King County and the City of Tukwila due to PCB contamination in the 24-inch storm drain line located between Boeing Plant 2 and Jorgensen Forge. Solids in the pipe contain up to 10,000 mg/kg DW PCBs.
- In response to the Notice of Violation, the City of Tukwila conducted a source control investigation of the city stormwater system in the vicinity of the 24-inch pipe. Grab water and solids samples were collected from six catch basins in the system and from a manhole at the east end of the Jorgensen Pipe. PCB concentrations in the storm drains ranged from <0.2 mg/kg to 0.91 mg/kg DW; the manhole sample contained 100 mg/kg DW PCBs.
- KCIA's Airport Engineering Section prepared a Source Control Report for KCIA Drainage Basin #5, dated January 7, 2009. The report includes a discussion of PCB data, KCIA operations and maintenance, and source control activities.

EAA-5 (Terminal 117)

- The Port of Seattle installed six new groundwater monitoring wells at Terminal 117; these and five existing wells were sampled quarterly in 2008 and 2009. Low concentrations of volatile organic compounds (VOCs) were detected in two of the new wells. Results of the four quarters of groundwater sampling indicated the presence of PCBs, polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH), bis(2-ethylhexyl)phthalate (BEHP) and arsenic at concentrations above screening criteria.
- On May 13, 2009, the Port of Seattle submitted a memo to EPA and Ecology recommending modifications to the groundwater monitoring program at Terminal 117.

- In October 2008, PCB analyses conducted on samples collected in yards along S Cloverdale Street showed the presence of PCBs, predominantly in the parking strip along the northern edge of the road. The city is working with EPA on next steps.
- The Dioxin Technical Workgroup presented a review of dioxin data and associated forensic evaluation to the Agencies and Stakeholders on December 15, 2008. They concluded that Terminal 117 impacts on yard dioxin/furan results are negligible-to-small, with relatively low uncertainty.
- The *Adjacent Streets PCB Boundary Refinement Quality Assurance Program Plan* (QAPP) was finalized and approved in April, and a field investigation was conducted from April 20 to April 29, 2009. Results were expected in July 2009.
- The final *Dioxin Investigation and PCB Sediment Boundary Delineation Report* was submitted to EPA on May 8, 2009. At a minimum, the Terminal 117 Engineering Evaluation/Cost Analysis (EE/CA) will be delayed for public comment by 3 to 6 months in order to incorporate the results.
- Ecology's Hazardous Waste Program issued a penalty of $41,000 to Basin Oil in December 2008. Basin Oil filed an appeal of the penalty with the Pollution Control Hearings Board; a hearing is scheduled for February 2010.
- Ecology hired a contractor (SAIC) to conduct soil and groundwater sampling at the Basin Oil property. Preliminary results indicate low levels of contaminants in soil and groundwater, however Basin Oil does not appear to represent a potential source of contamination to the LDW.
- In December 2008, Ecology's contractor (SAIC) completed a final report on sampling and testing for mercury in groundwater at South Park Marina using ultra-low detection limits. All concentrations were far below MTCA Method A and B cleanup levels, but one sample exceeded the draft groundwater-to-sediment screening level.
- SAIC assessed the potential for sediment contamination due to potential releases from the South Park Marina site, based on soil and groundwater sampling conducted in 2008. A Technical Memorandum was submitted in June 2009; Ecology is currently reviewing.

EAA-6 (Boeing Isaacson/Central KCIA)

- Boeing and Ecology began negotiating an Agreed Order to conduct an RI/FS and to prepare a draft Cleanup Action Plan for the Boeing Isaacson/Thompson site.

EAA-7 (Norfolk CSO/SD)

- In April 2009, Boeing's contractor (Calibre Systems) published a summary of storm drain line cleanout work and a 2008 sampling report for the South Storm Drain System at the Boeing Developmental Center. This report presents results of the post-removal monitoring associated with the south storm drain system, and documents additional cleaning performed in a segment of the storm drain system beneath Building 9-101.

RM 0.0 – 0.1 East (Spokane Street to Ash Grove Cement)

- An inspection of the Ash Grove Cement facility conducted by Ecology and SPU on January 14, 2009 found that stormwater from the facility discharges to the East Waterway via the S Hinds Street storm drain. Numerous compliance issues were identified.

RM 1.2-1.7 East (St. Gobain to Glacier Northwest)

- Remedial investigations and/or groundwater sampling are being conducted at Art Brass Plating, Blaser Die Casting, and Capital Industries. High concentrations of chlorinated solvents have been detected in groundwater near these facilities.

RM 1.7-2.0 East (Slip 2 to Slip 3)

- Ecology issued a Notice of Penalty in the amount of $20,000 to Imperium Renewables (Seattle Biodiesel) on December 4, 2008 for the July 2007 discharge of approximately 391 gallons of process mixture. The facility has since transitioned from a refinery to a research and development facility.
- Ecology approved a sampling plan for the Duwamish Marine Center; the plan includes sampling of catch basin solids, groundwater, and river bank soils. Work is currently underway.

RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)

- Ecology negotiated a new Agreed Order with Fox Avenue Building LLC, the current owner of the Cascade Columbia Distribution facility, in early 2009. The Agreed Order requires Fox Avenue Building LLC to implement an interim cleanup action, conduct a source area silts data gap investigation, collect vapor samples, conduct a supplemental evaluation of remediation alternatives, and submit a draft Cleanup Action Plan.
- The draft Feasibility Study (FS) and draft Cleanup Action Plan are scheduled to be completed in August and November 2009, respectively.

RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)

- SPU collected catch basin solids samples in September 2008 from catch basins located adjacent to the Seattle Iron & Metals facility. The samples contained lead, mercury, zinc, PAHs, phthalates, phenols, PCBs, and petroleum hydrocarbons at concentrations above screening levels.
- In November 2008, Ecology issued Follow-Up Order No .6185, requiring Seattle Iron & Metals to take corrective actions to prevent further violations of its National Pollutant Discharge Elimination System (NPDES) permit. The order requires Seattle Iron & Metals to prepare a comprehensive engineering report to evaluate the adequacy of its stormwater treatment system.
- In September 2008, Crowley Marine Services plugged a crack and hole in the steel plate seawall that borders the property along the LDW shoreline.

- SPU recently identified a 4-inch diameter concrete pipe at the SCL Georgetown Pump Station as an outfall; it had previously been misidentified as an intake pipe.
- In November 2008, the Georgetown Community Council collected soil samples from the right-of-way along 8th Avenue S near the CleanScapes (former Sternoff Metals) and Markey Machinery properties. PCBs (to 5.9 mg/kg DW), arsenic (to 60 mg/kg), lead (to 4,730 mg/kg) and petroleum hydrocarbons were detected. SPU collected soil/solids samples from six locations near the CleanScapes/former Sternoff Metals property in May 2009; PCBs, copper, lead, and mercury were detected.
- A June 2009 Ecology inspection at the CleanScapes facility identified numerous corrective actions that need to be implemented.

RM 3.9-4.3 East (Slip 6)

- Ecology, PACCAR, and Merrill Creek Holdings have signed an Agreed Order for upland cleanup at the 8801 Site, which includes completion of an RI/FS and Interim Action Work Plan. The order became effective on November 14, 2008.
- The PLP submitted a revised Sediment Evaluation Data Report in January 2009. Ecology provided comments and a final draft was submitted in June 2009. Ecology is currently reviewing this report.
- Ecology has reviewed an Interim Action Work Plan for the 8801 Site and provided comments on the RI portion. Ecology documented deficiencies that need to be addressed in a revised RI before it can approve a data gaps or supplemental investigation plan.

RM 1.3-1.6 West (Glacier Bay)

- Duwamish Shipyard, Inc. and Ecology signed an Agreed Order on July 9, 2009 to conduct an RI/FS and develop a draft Cleanup Action Plan. The public comment period will end on August 31, 2009.
- Glacier Northwest, Reichhold Chemicals, and Ecology signed an Agreed Order on May 14, 2009 to conduct an RI/FS at the site. The RI will determine the nature and extent of contamination in the upland area soil, groundwater, stormwater, stormwater solids, seeps, and sediments.
- A baseline groundwater sampling event was conducted at the Glacier Northwest/Reichhold site in March 2009; sample results from the 23 wells identified the presence of arsenic (to 3,090 ug/L), total chromium (to 7.6 ug/L), total copper (to 3.5 ug/L), total zinc (to 54.8 ug/L), pentachlorophenol (to 48 ug/L), and formaldehyde (to 0.013 ug/L).
- Glacier Northwest is currently preparing a data gaps report and a work plan for an interim cleanup action for arsenic contamination.
- The Port of Seattle and Ecology signed a Voluntary Cleanup Program (VCP) agreement in May 2009 for Terminal 115N (former MRI Corporation) to investigate and remediate soil and groundwater contamination. Lead and other contaminants are associated with five former aboveground storage tanks that were used for storage of plating solution, spent plating solution, and de-tinning solution.

Table ES-1. High Priority Source Control Action Items to be Completed

Source Control Area	Facility	Action Item	Type	Responsible Party	Status	Estimated Completion Date
EAA-1: Duwamish/ Diagonal Way	Diagonal Ave. S. CSO/SD	Conduct sediment trap sampling	New	SPU	In Progress	2009
	Rainier Commons/ Former Rainier Brewery	Conduct cleanup and disposal of PCB-contaminated paint chips on the ground surface and in the storm drain system	New	EPA/Property Owner	In Progress	July 2009
EAA-2: Trotsky Inlet	2nd Avenue S SD	Continue source tracing to identify sources of phthalates and other chemicals of concern (COCs).	SCAP	SPU	Planned	2010
	Industrial Container Services	Investigate destination of roof drainage from northwest corner of property	SCAP	King County/ Ecology/ SPU/ Industrial Container Services	Planned	August 2009
EAA-3: Slip 4	GTSP Flume	Close connections, remove contaminated sediment, and demolish and/or replace the flume	SCAP	SCL, SPU	In Progress	Fall 2009
	GTSP	Conduct sitewide site characterization to assess need for additional remediation	SCAP	SCL	Planned	2010
	KCIA	Complete source tracing	SCAP	KCIA	In Progress	December 2009
		Clean out catch basins and lines (if required)	SCAP	KCIA	In Progress	December 2009
		Continue business source control inspections and re-inspections as needed to verify that facilities comply with applicable regulations and BMPs	Follow-On	SPU, Ecology	Ongoing	December 2009
	NBF-GTSP	Conduct RI/FS and implement interim actions (as needed).	New	Ecology, Boeing, City of Seattle, King County	In Progress	2012
	North Boeing Field	Characterize extent of PCBs in new joint sealant material	Follow-On	Boeing	In Progress	2010
		Continue source tracing in north drain line to identify and/or eliminate transport of PCBs to Slip 4	Follow-On	Boeing	In Progress	2010
	North Boeing Field/KCIA /I-5 Storm Drain Basin	Reinstall sediment traps and continue monitoring as needed	SCAP	SPU, Boeing	Ongoing	2014
EAA-4: Boeing Plant 2 /Jorgensen Forge	Boeing Plant 2	Address removal of materials containing PCBs, including joint caulk material	SCAP	EPA, Boeing	In Progress	2009/2010
		Complete design and implementation of dredging, capping, and/or backfilling of the Duwamish Sediment Other Area (DSOA) Interim Measure	SCAP	EPA, Ecology, Boeing	In Progress	TBD
		Continue quarterly shoreline groundwater monitoring	SCAP	EPA, Boeing	In Progress	TBD
		Conduct stormwater source control sampling of suspended solids and/or water along active storm drain lines	New	Boeing	In Progress	TBD
		Implement catch basin solids sampling program	New	Boeing	In Progress	TBD
		Remove contaminated bank fill material	SCAP	EPA, Boeing	Planned	TBD
		Excavate PCB-contaminated soil in the substation area (southwest corner of Plant 2)	New	Boeing, Jorgensen	Planned	TBD
		Conduct a joint hydrologic investigation with Jorgensen Forge to provide additional hydrogeologic data at the boundary of the two facilities	SCAP	Boeing, Jorgensen	Planned	TBD
		Collect in-line sediment samples in the City of Seattle and City of Tukwila systems immediately prior to discharge to Plant 2's storm drain system	SCAP	EPA, Boeing	Planned	TBD

Source Control Area	Facility	Action Item	Type	Responsible Party	Status	Estimated Completion Date
	Jorgensen Forge	Conduct a source control investigation through Ecology Agreed Order No. DE-4127 to determine if the facility is an ongoing source of contamination to LDW sediments	SCAP	Jorgensen, Ecology	In Progress	2009
		Conduct soil and groundwater sampling in the southeast portion of the site (historically thought to have been occupied by a wood treating facility) to determine if arsenic contamination is present and if so, whether the contamination is leaching into the	SCAP	Ecology, Jorgensen	Planned	2009
		Review current groundwater monitoring data to ensure that groundwater is not a pathway for contaminants to the LDW	SCAP	Ecology, Jorgensen	Planned	2009
		Conduct groundwater sampling in the center of the property (previously occupied by Isaacson Iron Works) to determine if contaminants are present above screening levels	SCAP	Ecology, Jorgensen	Planned	2009
		Develop a hydrogeologic site model as part of the source control investigation to characterize the groundwater system on site, including tidal influence	SCAP	Jorgensen, Boeing	In Progress	TBD
		Negotiate an Amended Administrative Order on Consent (AOC) for preparation of an EE/CA for cleanup of affected sediments along a portion of the LDW adjacent to this property	New	EPA, Jorgensen	In Progress	TBD
		Remove PCB-contaminated sediments from the 24-inch storm drain line	Follow-On	King County, City of Tukwila	Planned	TBD
		Continue to address PCB and metal contamination in sediments of the LDW and Shoreline Bank Area through EPA CERCLA Order No. 10-2003-0001	SCAP	EPA, Jorgensen	Planned	TBD
EAA-5: Terminal 117	Dallas Ave S	Continue monitoring of stormwater and catch basin sediments	Follow-On	SPU, Port of Seattle	Ongoing	TBD
	Terminal 117	Revise the July 2008 EE/CA to incorporate all relevant upland and right-of-way data, including assessments of portions of the site formerly occupied by the Malarkey plant	New	City of Seattle, Port of Seattle, EPA	In Progress	TBD
		Conduct soil sampling at former Malarkey plant location to determine whether contamination is present in subsurface soil	Follow-On	City of Seattle, Port of Seattle	Planned	TBD
		Complete needed assessments of portions of the site formerly occupied by the Malarkey plant	Follow-On	City of Seattle, Port of Seattle	Planned	TBD
EAA-6: Boeing Isaacson/ Central KCIA	Boeing Isaacson/ Thompson Site	Negotiate an Agreed Order to conduct a MTCA RI/FS at the Boeing Isaacson/Thompson site.	SCAP	Ecology, Boeing	In Progress	2009
		Characterize contaminant concentrations in subsurface soil near the former location of the Slip 5 outfall, to the north of the 48-inch storm drain line, and at other locations on the property as needed.	SCAP	Boeing	Planned	2010
		Conduct a comprehensive soil and groundwater investigation at this property, including groundwater monitoring at selected wells and evaluation of potential arsenic sources; include wet and dry season samples.	SCAP	Boeing	Planned	2010
		If COCs in soil and groundwater are present at concentrations that pose a risk of sediment recontamination, then develop a plan for controlling these contaminant sources.	SCAP	Ecology, Boeing	Planned	2010

Source Control Area	Facility	Action Item	Type	Responsible Party	Status	Estimated Completion Date
	KC Airport SD #2/PS45 EOF	Follow up on discharges observed from the KC Airport SD#2/PS45 EOF in 2007 and 2008, to identify sources and/or characteristics of discharges.	SCAP	Ecology, SPU, King County	In Progress	2009
		Collect and analyze sediment trap sample to evaluate concentrations of chemicals in the central KCIA drainage basin. Reinstall sediment trap and continue to sample as needed.	SCAP	SPU	In Progress	TBD
		If COCs are present in the storm drain line, conduct source tracing to identify potential contaminant sources at KCIA.	SCAP	King County, SPU	Planned	TBD
	KCIA	Determine the presence or absence of PCB-containing joint caulking material within the central KCIA drainage basin.	SCAP	King County	Planned	2010
EAA-7: Norfolk CSO/SD	Boeing Developmental Center	Continue sediment monitoring in the vicinity of the south storm drain sediment removal activities	SCAP	Boeing	In Progress	TBD
		Determine the source of PCBs in storm drain solids and conduct source control activities to remove PCBs from the system	SCAP	Boeing	In Progress	TBD
		Continue monitoring storm drain solids	SCAP	Boeing	In Progress	TBD
RM 0.0-0.1 E: Spokane Street to Ash Grove Cement	Ash Grove Cement	Obtain a new NPDES permit for discharge into the City storm drain that discharges at S Hind Street.	SCAP	Ecology, Ash Grove Cement	Planned	December 2009
		Negotiate an agreed order for a Remedial Investigation/ Feasibility Study that will focus on potential soil and groundwater contamination at the site.	SCAP	Ecology, Ash Grove Cement	Planned	April 2010
		Conduct additional source control inspections to ensure compliance and implementation of BMPs.	SCAP	Ecology, Seattle Public Utilities	Planned	August 2010
	Harbor Marina Corporate Center	Demonstrate that the marina is in compliance with all applicable permits.	SCAP	Port of Seattle	Planned	August 2010
	Terminal 104	Ensure that storm drain structures and function are completely delineated and properly permitted. Existing drainage problems have been identified and need to be addressed.	SCAP	Ecology, Port of Seattle	Planned	February 2010
		Determine how to address identified data gaps in the western portion of T-104.	SCAP	Ecology, Port of Seattle	Planned	April 2012
		Review post remediation reports and annual report as part of the VCP and determine whether further action is needed.	SCAP	Ecology	Planned	TBD
RM 0.9-1.0 E: Slip 1	Federal Center South	Perform Site Hazard Assessment (SHA)	SCAP	Ecology	Planned	July 2009
		Conduct a follow-up stormwater inspection at the facility to verify completion of corrective actions requested in June 2004, and to collect information on current site operations/conditions	SCAP	Ecology, EPA, SPU	Planned	December 2009
	Former Snopac Products	Collect additional samples from Seep 76 to determine if the arsenic concentration reported in 2004 was an anomaly. Analyze sample for all sediment COCs	SCAP	Ecology	Planned	June 2010
	Manson Construction	If satisfactory soil cleanup was not achieved, require the property owner/operator to conduct a site assessment to determine residual concentrations of sediment COCs in soil and groundwater beneath the property.	SCAP	Ecology	Planned	2010
		Obtain laboratory data and site plans from historical site assessment(s) and remediation performed at the property. Confirm that satisfactory completion of soil cleanup activities was achieved. Determine if arsenic or other sediment	SCAP	Ecology	Planned	September 2009

Source Control Area	Facility	Action Item	Type	Responsible Party	Status	Estimated Completion Date
		COCs are present in soil.				
		Collect additional samples from Seep 76 to determine if the arsenic concentration reported in 2004 was an anomaly. Analyze sample for all sediment COCs.	SCAP	Ecology	Planned	June 2010
RM 1.2-1.7 E: St. Gobain to Glacier Northwest	Certainteed Gypsum	Review response to EPA 104(e) Request for Information letter sent to Certainteed Gypsum in July 2008.	SCAP	Ecology	Planned	April 2010
	Longview Fibre Paper and Packaging	Review response to EPA 104(e) Request for Information letter sent to Longview Fibre Paper and Packaging in March 2008.	SCAP	Ecology	Planned	April 2010
		Review the latest groundwater monitoring report regarding exceedances of TPH-D.	SCAP	Ecology	Planned	December 2012
	Saint Gobain Containers	Review response to EPA 104(e) Request for Information letter sent to Saint Gobain Containers Inc. (SGCI) in July 2008.	SCAP	Ecology	Planned	April 2010
		Determine appropriate engineering controls for the inaccessible contamination located beneath the soil/water separator described in the 1991 Limited UST Assessment.	SCAP	Property Owner/Operator	Planned	December 2012
RM 1.3-1.6 W: Glacier Bay	Duwamish Shipyard	Prepare work plans for further site investigations as specified in the Agreed Order	SCAP	Duwamish Shipyard	Planned	2009
		Conduct site investigations as specified in the Agreed Order Statement of Work	SCAP	Duwamish Shipyard	Planned	2010
		Review site investigation results and assess potential for sediment recontamination and need for remedial actions	SCAP	Ecology	Planned	2010/2011
	Glacier Northwest	Under the Agreed Order, require PLPs to prepare work plans for site investigations as specified by Ecology	SCAP	Property owner/operator	Planned	June 2010
		Review site investigation results and assess potential for sediment recontamination and need for remedial actions	SCAP	Ecology	Planned	Fall 2011
		Upon approval of work plans by Ecology, conduct site investigations as specified	SCAP	Property owner/operator	Planned	Spring 2011 to Spring 2012
		Under the Agreed Order, require PLPs to prepare a Data Gaps Report.	Follow-up	Ecology	In Progress	Summer 2009
RM 1.7-2.0 E: Slip 2 to Slip 3	Duwamish Marine Center	Determine the status of Outfalls 2021 and 2022; if they are currently in use, determine the area drained by these outfalls and assess the potential for COCs to reach the LDW via this pathway.	SCAP	SPU, Ecology	Planned	September 2009
		Require the property owner/operator to collect additional soil/groundwater data.	SCAP	Ecology	In Progress	December 2009
		Require the property owner/operator to collect data on concentrations of chemical contaminants in river bank soils to assess the potential for sediment recontamination by erosion.	SCAP	Ecology	Planned	December 2009
RM 2.0-2.3 E: Slip 3 to Seattle Boiler Works	Glacier Marine Services	Conduct in-line storm drain sampling to evaluate whether COCs are migrating to LDW sediments via the Glacier Marine Services storm drain system.	SCAP	SPU, Ecology	Planned	September 2009
		Conduct a source control inspection to clarify issues related to storm drain system configuration and location of outfalls, sanitary sewer connections, and current activities at the facility as identified in the SCAP; conduct storm drain sampling as neede	SCAP	SPU, Ecology	Planned	September 2010

Source Control Area	Facility	Action Item	Type	Responsible Party	Status	Estimated Completion Date
	Riverside Industrial Park	Conduct a source control inspection to address the two former shop building floor drains, determine if storm drain lines between the shop building and office building pass through areas where contaminated soil has been excavated, and conduct in-line storm	SCAP	Ecology, SPU	Planned	October 2009
	S Brighton Street CSO/SD	Conduct source tracing in the S Brighton Street CSO/SD basin	Follow-On	SPU, Ecology	Planned	2010
	S River Street SD	Conduct source tracing in the S River Street SD basin	Follow-On	SPU, Ecology	Planned	2010
	Schultz Distributing	Conduct a source control inspection to verify compliance with applicable regulations/codes, dtermine whether storm drain lines pass through the area of chlorinated solvent groundwater contamination near the tank farm, determine whether the storm drains di	SCAP	SPU, Ecology	Planned	November 2009
		Conduct in-line storm drain sampling to evaluate whether COCs are migrating to LDW sediments via the Shultz Distributing storm drain system.	SCAP	SPU, Ecology	Planned	November 2009
	Seattle Distribution Center	Conduct a source control inspection to determine whether the facility needs a NPDES permit, and confirm the presence of discharge points to the LDW including Outfall #2025 and an additional private storm drain line.	SCAP	SPU, Ecology	In Progress	Aug-09
RM 2.3-2.8 E: Seattle Boiler Works to Slip 4	Bunge Foods	Review responses to EPA's Request for Information 104(e) letters sent to William P. Guimont, Fox Avenue Warehouse Corporation, Bunge Foods Processing LLC, and Dawn Food Products, Inc.	SCAP	Ecology	Planned	September 2009
	Crowley Marine Services	Review information submitted to EPA in response to the Request for Information 104(e) letters sent to Crowley Marine Services, Samson Tug and Barge Company, Northland Services, and Evergreen Marine Leasing.	SCAP	Ecology	Planned	August 2009
		Collect stormwater and/or solids samples from storm drain system to determine if onsite system is source of COCs found in waterway sediment.	SCAP	Ecology	Planned	August 2009
		Review the Environmental Investigation Report, Crowley Marine Services Site, dated August 1, 2008 (prepared by SLR International Corp) and identify remaining data gaps and source control actions for the property.	SCAP	Ecology	In Progress	TBD
		In conjunction with an Agreed Order for the Crowley Marine Services site, perform additional investigations that include collection of data on chemical concentrations in soil and groundwater at the western and southern portions of the property.	SCAP	Crowley Marine Services	Planned	TBD
	Former Trim Systems	Review responses to EPA's July, 2008 Request for Information 104(e) letters sent to Seattle Iron & Metals, Manson Construction, and Northwest Container Services.	SCAP	Ecology	Planned	December 2009
	Nitze-Stagen/Frye Parcels	Review responses to EPA's Request for Information 104(e) letters sent to Nitze-Stagen and Pioneer Human Services.	SCAP	Ecology	Planned	December 2009
	Puget Sound Truck Lines	Review responses to EPA's Request for Information 104(e) letters sent to Puget Sound Truck Lines and R&A Properties LLC.	SCAP	Ecology	Planned	August 2009

Source Control Area	Facility	Action Item	Type	Responsible Party	Status	Estimated Completion Date
		Determine whether the five outfalls identified at the property are active, and identify the source of discharge from these outfalls, if any.	SCAP	Ecology, Property owner/operator	Planned	October 2009.
	SCL Georgetown Pump Station	Determine if the drainage ditch/pipe is active and if it discharges to the LDW. If active, determine the area drained by the drainage ditch/pipe and determine the potential for sediment COCs to reach the LDW.	SCAP	Ecology, SPU	Planned	2010
	Seattle Boiler Works	Conduct follow-up inspections to the June 2007 stormwater compliance inspection as needed to verify that deficiencies noted during the inspection have been corrected. Obtain an updated facility plan showing the locations of all catch basins, maintenance h	SCAP	Ecology	Planned	August 2009
		Review responses to EPA's Request for Information 104(e) letters sent to Fred Hopkins/Seattle Boiler Works, Inc., Frank H. Hopkins Family LLC, and National Steel Construction Company, and identify additional data gaps/source control action items as needed	SCAP	Ecology	Planned	September 2009
		Determine if the five outfalls that are not included in Seattle Boiler Work's NPDES permit are in use. If in use and Seattle Boiler Works is the source of discharge, modify the facility's stormwater permit to include these outfalls.	SCAP	Ecology	Planned	December 2009
		If Seattle Boiler Works is not the source of discharges to these five outfalls, perform source tracing to identify potential sources discharging to the outfalls	SCAP	Ecology/SPU	Planned	December 2009
	Seattle Iron & Metals	Request information from the facility operator regarding the source of discharge, if any, to Outfall 2034, observed along the Seattle Iron & Metals shoreline during SPU's outfall survey.	SCAP	Ecology	Planned	July 2009
		Review responses to EPA's Request for Information 104(e) Letter sent to Seattle Iron & Metals, Manson Construction Company, Othello Street Warehouse Corporation, and The Maust Corporation in July 2008.	SCAP	Ecology	Planned	September 2009
		Monitor compliance with Ecology Follow-Up Order No. 6185.	SCAP	Ecology	In Progress	October 2009
	SPU Storm Drains and Outfalls	Conduct source tracing to identify potential contaminant sources to stormwater discharging to the LDW through the S Myrtle Street and S Garden Street outfalls.	SCAP	SPU	Planned	December 2009
RM 3.9-4.3 E: Slip 6	8801 Site	Re-evaluate existing soil and groundwater data and compare to site-specific screening levels (to be developed) for metals, PAHs, petroleum hydrocarbons, PCBs, SVOCs, and VOCs as COCs in the LDW, and test for dioxin/furans.	SCAP	Ecology, PACCAR, Merrill Creek	Ongoing	2008
		Negotiate expanding the stormwater and storm drain solids monitoring to add COCs at the site. Review future monitoring results to determine if further actions are necessary.	SCAP	Ecology, IAAI, Merrill Creek	Ongoing	2010
		Expand investigation of the southwest storage area and northwest corner of the site to determine the extent of soil and groundwater contamination.	SCAP	Ecology, PACCAR, Merrill Creek	Ongoing	2008-2010
		Complete Phase 2 of the Sediment Evaluation Work, which includes sediment core sampling in selected locations in the LDW adjacent to the site.	SCAP	Ecology, PACCAR	Ongoing	Fall 2008

Source Control Area	Facility	Action Item	Type	Responsible Party	Status	Estimated Completion Date
	Boeing Developmental Center	Conduct stormwater and/or storm drain solids monitoring for outfalls DC14 and DC15.	SCAP	Ecology, Boeing	Planned	TBD
	Former Rhone-Poulenc	Review the current SWPPP and Operations and Maintenance Plan. Make necessary changes and additions to prevent contaminants from potential upland sources (such as fuel leaks from damaged vehicles) from migrating to Slip 6 source control area sediments via	SCAP	Ecology, IAAI	Planned	2008
		Address the toluene groundwater contamination in the southwest corner of the East Parcel, in accordance with the Revised East Parcel Corrective Measures Implementation Work Plan.	SCAP	EPA, Container Properties, Rhodia, Bayer CropScience	Ongoing	2009
		Investigate and address shoreline bank contamination from historical site operations and releases (e.g. application of vanillin black liquor solids to the shoreline bank for weed control).	SCAP	EPA, Container Properties, Rhodia, Bayer CropScience	Planned	2009
		Continue to monitor the effectiveness of the hydraulic interim control measure (HCIM), and investigate the presence of elevated copper concentrations in groundwater outside the barrier wall and the potential leak in the barrier wall.	SCAP	EPA, Container Properties, Rhodia, Bayer CropScience	Ongoing	
	KCIA	Evaluate the "Drainage Area 3" portion of the KCIA stormwater system that discharges to the LDW via the King County stormwater line to determine if stormwater and/or storm drain solids monitoring is necessary.	SCAP	Ecology, KCIA	Planned	TBD
	King County Stormwater Outfall	Collect in-line water and storm drain solids samples to evaluate if COCs are migrating to Slip 6 source control area sediments via the storm drain outfall.	SCAP	King County	Planned	TBD
		Conduct source tracing to identify sources of COCs to the storm drain line, as necessary.	SCAP	King County	Planned	TBD
	Museum of Flight	Monitor stormwater and/or storm drain solids at MOF and former BDC properties in the vicinity of USTs and associated groundwater contamination.	SCAP	Ecology, MOF	Planned	TBD
		Identify the source and extent of groundwater contamination on the former BDC property, and conduct remedial action, as necessary.	SCAP	Ecology, MOF	Planned	TBD

List of Acronyms

2LAET	Second Lowest Apparent Effects Threshold
AST	aboveground storage tank
BBP	butylbenzylphthalate
BDC	Boeing Developmental Center
BEHP	bis(2-ethylhexyl)phthalate
BMP	best management practice
BTEX	benzene, toluene, ethylbenzene, and xylenes
CB	catch basin
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	chemical of concern
CSCSL	Confirmed or Suspected Contaminated Sites List
CSL	Cleanup Screening Level
CSO	combined sewer overflow
DDT	dichloro-diphenyl-trichloroethane
DOH	Washington State Department of Health
DRCC	Duwamish River Cleanup Coalition
DSOA	Duwamish Sediment Other Area
DW	dry weight
EAA	Early Action Area
Ecology	Washington State Department of Ecology
EE/CA	Engineering Evaluation/Cost Analysis
EMF	Electronics Manufacturing Facility
EOF	Emergency Overflow
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
GSA	General Services Administration
GTSP	Georgetown Steam Plant
HPAH	high molecular weight PAH
HWTR	Hazardous Waste and Toxics Reduction
IAAI	Insurance Auto Auctions, Inc.
KCIA	King County International Airport
KCIW	King County Industrial Waste
LAET	Lowest Apparent Effects Threshold
LDW	Lower Duwamish Waterway
LDWG	Lower Duwamish Waterway Group
LUST	leaking underground storage tank
MTCA	Model Toxics Control Act
NA	not applicable
NBF	North Boeing Field
NEC	not elsewhere classified
NHPA	National Historic Preservation Act
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
OC	organic carbon

List of Acronyms (Continued)

PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PHSKC	Public Health – Seattle and King County
PLP	potentially liable party
PSC	Philip Services Corporation
PSCAA	Puget Sound Clean Air Agency
QAPP	Quality Assurance Program Plan
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RM	river mile
ROD	Record of Decision
SAIC	Science Applications International Corporation
SAP	Sampling and Analysis Plan
SCAP	Source Control Action Plan
SCL	Seattle City Light
SCWG	Source Control Work Group
SD	storm drain
SHA	Site Hazard Assessment
SMS	Sediment Management Standards
SPU	Seattle Public Utilities
SQS	Sediment Quality Standard
SVE	soil vapor extraction
SVOC	semivolatile organic compound
TBD	to be determined
TCDD	2,3,7,8-tetrachlorodibenzo-*p*-dioxin
TCE	trichloroethylene
TCP	Toxics Cleanup Program
TEQ	toxic equivalency concentration
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TSCA	Toxic Substances Control Act
UPRR	Union Pacific Railroad
UST	underground storage tank
VCP	Voluntary Cleanup Program
VOC	volatile organic compound
WQ	Water Quality

1.0 Introduction

This report summarizes the status of source control efforts in the Lower Duwamish Waterway (LDW) from September 1, 2008, through June 30, 2009. The Washington State Department of Ecology (Ecology) published the first Source Control Status Report in July 2007, covering the period from 2003 to June 2007 (Ecology 2007b). The reader is referred to the July 2007 Source Control Status Report for more detailed information on:

- The history of the LDW Superfund Site,
- Agency roles and responsibilities,
- The LDW source control strategy and Source Control Work Group,
- The Lower Duwamish Waterway Group (LDWG) and the Remedial Investigation/Feasibility Study (RI/FS), and
- Site-wide source control programs.

Subsequent updates were published in May 2008 (Ecology 2008a) and October 2008 (Ecology 2008e). Detailed background on individual source control areas is provided in the Data Gaps Reports and Source Control Action Plans (SCAPs) for each area, as referenced in the text.

This section summarizes background information on the LDW Superfund Site. Section 2 describes the process for developing SCAPs for known or potential sediment cleanup areas. Section 3 describes source control methods and the process for implementing SCAPs, and describes the status of source control activities being conducted for the entire LDW. Section 4 describes recent source control activities associated with the Early Action Areas, while Section 5 describes Tier Two and Three source control areas. Section 6 presents a list of references. Figures are presented after Section 6.

1.1 Lower Duwamish Waterway Site

The LDW is the downstream portion of the Duwamish River, which extends from the southern tip of Harbor Island to just south of the Norfolk Combined Sewer Overflow (CSO) (Figure 1).

Chemicals of concern in the waterway include mercury and other metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), phthalates, and other organic compounds. These chemicals may pose a threat to people, fish, and wildlife.

The Remedial Investigation (RI) for the LDW Superfund Site is being conducted in two phases. Results of Phase 1 were published in July 2003 (Windward 2003a). The Phase 1 RI used existing data to provide an understanding of the nature and extent of chemical distributions in LDW sediments, develop preliminary risk estimates, and identify candidate sites for early cleanup action within the LDW.

The *Technical Memorandum: Data Analysis and Candidate Site Identification*, issued in June 2003, described seven candidate sites for early sediment cleanup action (Windward 2003b). The seven sites, shown in Figure 1 and identified as Early Action Areas (EAAs), are listed below:[1]

- Area 1: Duwamish/Diagonal CSO and storm drain (SD), east side of the waterway (River Mile [RM] 0.4 to 0.6)
- Area 2: RM 2.2, west side of the waterway, just south of the 1st Avenue S bridge
- Area 3: Slip 4 (RM 2.8)
- Area 4: South of Slip 4, on the east side of the waterway, just offshore of Boeing Plant 2 and Jorgensen Forge properties (RM 2.9 to 3.7)
- Area 5: Terminal 117/Malarkey, west side of the waterway (approximately RM 3.6)
- Area 6: RM 3.8, east side of the waterway
- Area 7: Norfolk CSO, east side of the waterway (RM 4.9 to 5.5)

The Phase 2 sediment RI is designed to fill critical data gaps identified in Phase 1 and to complete human health and ecological risk assessments. The draft final Phase 2 RI was published in October 2008. A feasibility study is being developed to address cleanup options in the LDW.

Further information about the LDW can be found at the U.S. Environmental Protection Agency (EPA) LDW website: http://yosemite.epa.gov/r10/cleanup.nsf/sites/lduwamish and the LDWG website: http://www.ldwg.org.

1.2 Lower Duwamish Waterway Source Control Strategy

The LDW Source Control Strategy (Ecology 2004a) involves developing and implementing a series of detailed, area-specific SCAPs. SCAPs document what is known about the area, potential sources of recontamination, and actions needed to address them. Each SCAP is unique to a specific sediment area because the scope of source control for each sediment area varies.

The source control strategy can be found at Ecology's website:
http://www.ecy.wa.gov/programs/TCP/sites/lower_duwamish/source_control/sc.html

Further information about LDW source control can be found at Ecology's Lower Duwamish Source Controls website:
http://www.ecy.wa.gov/programs/tcp/sites/lower_duwamish/lower_duwamish_hp.html

[1] In this report, the seven candidate sites are referred to by the following designations:
Area 1 – EAA-1 (Duwamish/Diagonal Way)
Area 2 – EAA-2 (Trotsky Inlet)
Area 3 – EAA-3 (Slip 4)
Area 4 – EAA-4 (Boeing Plant 2/Jorgensen Forge)
Area 5 – EAA-5 (Terminal 117)
Area 6 – EAA-6 (Boeing Isaacson/Central KCIA)
Area 7 – EAA-7 (Norfolk CSO/SD)

1.3 Source Control Work Group

The primary public agencies responsible for source control for the LDW are Ecology, the City of Seattle, King County, Port of Seattle, the City of Tukwila, and the EPA. Together they are known as the LDW Source Control Work Group (SCWG).

The roles of the SCWG agencies are summarized in the July 2007 Source Control Status Report (Ecology 2007b). Any additional roles that may be developed will be described in the area-specific SCAPs. Roles for other public agencies, such as the Washington Department of Transportation, Puget Sound Clean Air Agency (PSCAA), or Public Health – Seattle and King County (PHSKC), may also be developed as information collection and source control proceeds.

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2.0 Developing Source Control Action Plans

2.1 Background

Ecology is developing SCAPs for 23 subbasins (or source control areas) that drain to the LDW Superfund Site (Figure 2).

The Source Control Strategy (Ecology 2004a) established four prioritized tiers of work:

- Tier 1: Source control associated with Early Action sediment cleanups
- Tier 2: Source control associated with EAAs identified in Phase 1 and cleanup areas identified in Phase 2 of the sediment RI and EPA's Record of Decision (ROD)
- Tier 3: Source control necessary to prevent future sediment contamination from basins that may not drain directly to an identified sediment cleanup area
- Tier 4: Source control necessary to address any recontamination identified by post-cleanup monitoring of sediment

SCAPs were developed for the Tier 1 source control areas along the LDW, which includes the seven EAAs identified in Section 1.1. In 2007, Ecology, in consultation with EPA, identified eight potential Tier 2 source control areas. These were based on available sediment data, size of the upland basin draining to the source control area, and general knowledge about facilities operating in the basin. In February 2008, Ecology identified the subdrainage basins for areas of the LDW that were not already included in a SCAP or planned SCAP. Using the same criteria as in 2007, eight additional potential source control areas were added to the list.

The designation of a sediment area as Tier 2 or Tier 3 depends on whether it needs cleanup. Since the RI is still being developed and the ROD will not be published until 2010, that decision will not be made for several more months. Until that time, there is no way to distinguish Tier 2 and Tier 3 areas with any certainty. This report addresses the Tier 1 areas in Section 4 and the remaining 16 source control areas in Section 5. The seven EAAs and 16 Tier 2 and Tier 3 areas are shown in Figure 2.

The SCAP for each of these sediment areas identifies potential contaminant sources and actions needed to control them, and evaluates whether ongoing sources are present that could recontaminate sediments after cleanup. In addition, the SCAPs describe source control actions that are planned or currently underway, and sampling and monitoring activities that will be conducted to identify additional sources.

Ecology works with the SCWG members to develop SCAPs. Members of the SCWG provide information that is incorporated into the SCAPs, such as information needed to define the storm drain and CSO basins as well as to identify and evaluate National Pollutant Discharge Elimination System (NPDES) permitted facilities and contaminated properties.

2.2 SCAP Publication Schedule

Fifteen SCAPs have been published to date. Publication of the remaining eight SCAPs depends on the availability of funding in the 2009–2011 biennium. The publication dates and schedule for the 23 SCAPs are as follows:[2]

Source Control Site	Complete	Planned Start	Publication Date
EAA-1 (Duwamish/Diagonal Way)	●	February 2003	December 2004
EAA-2 (Trotsky Inlet)	●	August 2006	June 2007
EAA-3 (Slip 4)	●	May 2004	July 2006
EAA-4 (Boeing Plant 2/Jorgensen Forge)	●	November 2006	December 2007
EAA-5 (Terminal 117)	●	April 2004	July 2005
EAA-6 (Boeing Isaacson/Central KCIA)	●	October 2007	March 2009
EAA-7 Norfolk CSO/SD	●	September 2006	September 2007
RM 0-0.1 East (Spokane Street to Ash Grove Cement)	●	April 2008	June 2009
RM 0.9-1.0 East (Slip 1)	●	March 2008	May 2009
RM 1.0-1.2 East (KC lease parcels)		September 2009	TBD
RM 1.2-1.7 East (St. Gobain to Glacier Northwest)	●	April 2008	June 2009
RM 1.7-2.0 East (Slip 2 to Slip 3)	●	April 2008	June 2009
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)	●	October 2007	April 2009
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)	●	December 2007	June 2009
RM 3.9-4.3 East (Slip 6)	●	October 2007	September 2008
RM 4.3-4.9 East (Boeing Developmental Center)		October 2009	TBD
RM 0-1.0 West (Spokane Street to Kellogg Island)		TBD	TBD
RM 1.0-1.3 West (Kellogg Island to Lafarge Cement)		TBD	TBD
RM 1.3-1.6 West (Glacier Bay)	●	February 2007	November 2007
RM 1.6-2.1 West (Terminal 115)		November 2009	TBD
RM 2.2-3.4 West (Riverside Drive)		TBD	TBD
RM 3.8-4.2 West (Sea King Industrial Park)		TBD	TBD
RM 4.2-4.8 West (Restoration Areas)		TBD	TBD

2.3 SCAP Implementation Schedule

The early stage of source control within a drainage basin, which includes conducting business/industrial inspections and tracing sources, is an intensive effort and continues until apparent sources are controlled. As businesses and land use change, the potential sources change as well. For large drainage basins such as the Duwamish/Diagonal Way CSO/SD, business inspections and source tracing are long-term, ongoing efforts. While it may be possible to reduce the level of effort needed over time within a given drainage basin, inspections and source tracing

[2] Company names are used only to designate source control area locations; source control area names are not intended to assign responsibility for contamination or to identify properties that may need remediation.

must continue regularly over the longer term in order to identify and control new potential sources as they arise.

For discrete upland sources, such as facilities that require cleanup under the Model Toxics Control Act (MTCA) or federal cleanup laws, cleanup and control are also long-term efforts. Contaminated soil may be a source of sediment recontamination through several pathways. Contaminants in soil adjacent to the LDW can enter the waterway through erosion. Some soil contaminants migrate into groundwater or change the chemistry of the soil and cause other contaminants to become more mobile. Some groundwater contaminants accumulate as they come into contact with sediments. These sites may directly affect sediments in the river and, while identifying them and bringing them under control is possible, it often takes several years. Due to the time it takes to clean up a contaminated site, Ecology believes the time and available resources needed to complete upland site cleanups will be a limiting factor for achieving river-wide source control. This will affect the schedule for the cleanup of sediment areas identified in the ROD.

Each of the 15 SCAPs published to date includes action items needed to complete source control for each source control area. As investigations are conducted, these action items have been updated as appropriate. Routine functions, such as ongoing inspections and review of NPDES permits, have been removed from the action item tables for specific source control areas. In some cases, multiple action items have been consolidated into a single action item or an action item has been split into its component parts to allow more efficient tracking. Some action items have been edited for brevity and clarity. Follow-on action items, based on outcomes of original action items published in the SCAPs, have been added; in addition, new action items have been added as appropriate if new information about a facility or source control area has become available. For example, if an inspection was conducted that led to additional investigation activities at a site, these activities were added as a new action item.

The table below lists the number of action items as published in the original SCAPs, and the number of action items currently identified for each source control area.

Source Control Area	No. of Action Items Listed in SCAP	Updated No. of Action Items[a]	Action Items Completed	Action Items Planned or In Progress
EAA-1 (Duwamish/Diagonal Way)	16	29	18	11
EAA-2 (Trotsky Inlet)	30	33	14	19
EAA-3 (Slip 4)	44	52	32	17
EAA-4 (Boeing Plant 2/Jorgensen Forge)	31	31	5	26
EAA-5 (Terminal 117)	19	31	20	11
EAA-6 (Boeing Isaacson/Central KCIA)	31	28	0	28
EAA-7 Norfolk CSO/SD	44	42	5	36
RM 0-0.1 East (Spokane Street to Ash Grove Cement)	13	13	0	13
RM 0.9-1.0 East (Slip 1)	19	19	0	19
RM 1.2-1.7 East (St. Gobain to Glacier Northwest)	17	17	0	17

Source Control Area	No. of Action Items Listed in SCAP	Updated No. of Action Items[a]	Action Items Completed	Action Items Planned or In Progress
RM 1.7-2.0 East (Slip 2 to Slip 3)	37	37	0	37
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)	31	31	4	27
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)	42	42	2	40
RM 3.9-4.3 East (Slip 6)	29	23	1	22
RM 1.3-1.6 West (Glacier Bay)	32	29	10	19
TOTAL	**435**	**457**	**111**	**338**

a – Includes action items that have been canceled because they were not needed.

Currently, a total of 457 source control action items have been identified based on the 15 SCAPs published as of the end of June 2009:

- 111 (24 percent) of these action items have been completed,
- 48 (11 percent) are in progress,
- 281 (61 percent) are planned,
- 13 (3 percent) are ongoing, long-term actions, and
- 4 (1 percent) have been cancelled (if they were not needed).

Of the 342 action items that are active (i.e., in progress, planned, or ongoing), 113 (33 percent) are considered high priority (to be completed prior to sediment cleanup), 162 (47 percent) are medium priority (to be completed prior to or concurrent with sediment cleanup), and 67 (20 percent) are low priority (ongoing actions, or actions to be completed as resources become available).

The action item tally presented above reflects a net increase of 199 action items during the current reporting period (September 2008 through June 2009) as a result of the completion of SCAPs for eight source control areas. A total of 35 action items were completed during this period. Additional action items will be identified as SCAPs are completed for the remaining eight source control areas. The status of action items for each source control area is shown in Figure ES-1.

Ecology developed long-term projections for implementing source control in the LDW during preparation of the July 2007 Source Control Status Report, and updated them in May 2008 and October 2008. These projections have been updated again for the August 2009 Source Control Status Report.

The updated schedule for upland site assessment and cleanup activities is presented in Table 1; the entire schedule, including SCAP preparation and implementation, is shown in more detail in Appendix A.

The schedule for river-wide source control continues to be dependent on the time and resources needed to conduct cleanup at contaminated upland sites. Additional upland sites that may require site assessment and cleanup continue to be identified as additional SCAPs are completed.

Table 1. Projected Source Control and Site Assessment Cleanup Schedule

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Site Manager 1													
EAA-3: NBF/GTSP										Apr 2007 - May 2015			
RM 1.3-1.6 W: Duwamish Shipyard								May 2007 - Oct 2014					
EAA-7 (Norfolk CSO/SD)											Start Jul 2010; Finish Mar 2017		
RM 4.3-4.9 E (Boeing Develop. Center)											Sep 2010 - Mar 2017		
RM 0-1.0 W (Spokane St. to Kellogg Isl.)													Jun 2012 - Dec 2018
Site Manager 2													
EAA-2: Trotsky Property										Jan 2008 - May 2015			
EAA-3: Crowley Marine									Apr 2008 - Nov 2014				
RM 0.9-1.0 E (Slip 1)											Mar 2010 - Aug 2016		
RM 2.3-2.8 E (SBW to Slip 4)											Jun 2010 - Nov 2016		
Site Manager 3													
RM 1.3-1.6 W: Glacier NW/Reichhold									Mar 2008 - Sep 2014				
RM 1.3-1.6 W: Terminal 115N										Jul 2009 - Oct 2015			
RM 0-0.1 E (Ash Grove Cement)											Sep 2009 - Feb 2016		
RM 1.2-1.7 E (St. Gobain to Glacier NW)											Jul 2010 - Dec 2016		
Site Manager 4													
EAA-6: Boeing Isaacson										Dec 2008 - Aug 2015			
RM 3.9-4.3 E: 8801 Site							Jan 2008 - Jun 2012						
RM 1.7-2.0 E (Slip 2 to Slip 3)											Dec 2009 - May 2016		
RM 1.0-1.2 E (KC Lease Parcels)												Oct 2010 - Mar 2017	
Site Manager 5													
RM 2.0-2.3 E (Slip 3 to SBW)												Oct 2010 - Mar 2017	
RM 1.6-2.1 W (Terminal 115)												Apr 2011 - Sep 2017	
RM 1.0-1.3 W (Kellogg Island to La Farge)													Jul 2012 – Dec 2018
RM 2.2-3.4 W (Riverside Drive)													Oct 2012 – Mar 2019
Part-Time Site Managers													
EAA-4: Jorgensen Forge						Apr 2007 - Dec 2011							
RM 2.0-2.3 E: Fox Avenue Building							Jan 2009 - May 2012						
Other Agencies													
EAA-1: Port of Seattle						Jan 2005 - Jul 2011							
EAA-4: Boeing Plant 2										Jan 2003 - Jun 2015			
EAA-5: Terminal 117								Aug 2005 - May 2013					
RM 3.9-4.3 E: Rhone-Poulenc Site							Jan 2009 - Jun 2012						

Note: Start date is initiation of Potentially Liable Party (PLP) determination process; Finish date is completion of Source Control Determination.

Ecology's Toxics Cleanup Program (TCP) currently has four full-time site managers dedicated to contaminated upland sites in the LDW. The projected schedule assumes that a fifth site manager will be required by October 2010.

The long-term schedule projection for implementing source control is based on a number of scheduling assumptions. These assumptions are presented in Appendix A. The current schedule projection assumes that the SCAPs will identify up to 21 upland contaminated cleanup sites. The 21 upland sites include only those for which Ecology will need to assign one of its full-time site managers; work is underway at eight of these sites (Industrial Container Services/Trotsky, Crowley Marine Services, North Boeing Field/Georgetown Steam Plant, Boeing Isaacson/Thompson, 8801 Site, Duwamish Shipyard, Glacier Northwest/Reichhold, and Terminal 115N). The 21 cleanup sites included in the schedule do not include the EPA-lead sites, three additional sites where samples to support source control efforts have been collected by Ecology (Douglas Management, Basin Oil, and South Park Marina), or other MTCA cleanup sites within the LDW basin that are managed by non-TCP Ecology staff or which are not identified as significant sources of sediment recontamination.

It should be noted that the schedule projection in Appendix A makes assumptions with regard to site manager staffing, but does not address the availability of staff needed for planning, coordination, reporting, oversight, or community involvement. These functions are vital to the overall source control effort for the LDW Superfund Site; the availability of staff in these areas may influence the overall source control schedule.

Due to loss of funding for LDW source control efforts under the Puget Sound Initiative for the 2009–2011 biennium, Ecology has expressed growing concerns about its ability to meet the LDW cleanup schedule (SPU 2009c). In addition, a recent commitment to accelerate work on EAA-3 (Slip 4) will require an increased investment of staff involvement in the NBF-GTSP RI/FS, interim actions, and cleanup, and will reduce the availability of staff and resources for other source control areas.

The projected schedule estimates that source control from all of the 21 potentially contaminated upland sites could be implemented by March 2019.

3.0 Source Control Implementation

The three main types of source control activities are business inspections, source tracing, and upland site assessment and cleanup. These and other source control methods that are being implemented for the LDW as a whole were described in the July 2007 Source Control Status Report (Ecology 2007b); updates were provided in the May and October 2008 Source Control Status Reports (Ecology 2008a, 2008e). The following sections provide updates on the status of these activities. Action items associated with LDW-wide source control activities are summarized in Table 2. Source control activities related to specific source control areas are discussed in Sections 4 and 5.

EPA continues to send Request for Information letters to current and former property owners, tenants, or facility operators in the vicinity of the LDW. These letters, issued pursuant to CERCLA Section 104(e), request information about materials handled at these sites, past practices, and known or suspected releases of contamination to the LDW. To date, EPA has issued 223 Request for Information letters; a list of entities who have received these letters is available at EPA's LDW web site: http://yosemite.epa.gov/r10/CLEANUP.NSF/sites/LDuwamish.

3.1 Business Inspections

3.1.1 SPU Business Inspection Program

Seattle Public Utilities (SPU) inspects businesses in areas that discharge to the LDW through either the city-owned storm drain system or the combined sanitary/storm sewer system. SPU's business inspection program addresses stormwater, hazardous waste, and industrial waste issues.

King County provides technical support on industrial waste and hazardous waste issues as needed, and inspects facilities permitted through its Industrial Waste program. King County's inspections focus on industrial waste issues.

The City of Seattle operates the local sanitary/combined sewers that collect wastewater and route it to the King County interceptor system, and it operates the municipal storm drains within the City of Seattle. King County operates the large interceptor pipes that convey municipal and industrial wastewater to the West Point treatment plant, and it operates the storm drain system in unincorporated King County. The sanitary/combined sewer and storm drains (including private storm drains) serve an area of about 19,800 and 8,940 acres, respectively.

During the current reporting period (September 2008 through June 2009), SPU has continued inspecting local businesses in the Lower Duwamish service area to ensure that businesses are implementing appropriate pollution prevention practices and complying with local stormwater, industrial pretreatment, and hazardous waste regulations.

SPU conducted a total of 131 inspections during the period from September 2008 through June 2009, including 63 new inspections and 68 follow-up inspections, at a total of 72 facilities. Of the 68 facilities with new inspections during this reporting period, 57 required one or more

corrective actions, and 33 of these were able to achieve compliance as of June 30, 2009. In addition, 14 facilities that were inspected during a previous reporting period were able to achieve overall compliance. Inspection locations are shown in Figure 3. Facilities that have been inspected by SPU during the current reporting period are listed in Appendix B.

During the period September 2008 through June 2009, inspections were conducted in the following subbasins:

Subbasin	No. of Facilities Inspected
Diagonal SD	16
Duwamish (NEC) CSO	7
Duwamish (NEC) SD	29
Slip 4	5
South Park	10
Trotsky	1
Norfolk SD	1
7th Avenue S SD	3
Total	**72**

NEC – Not Elsewhere Classified

Overall, inspections have been conducted at 827 facilities since 2003. Corrective actions were required at 600 (72.5 percent) of the sites that have been inspected. Of the corrective actions identified, 43 percent related to spill response, 37 percent related to stormwater issues, 19 percent related to hazardous waste, and 1 percent related to industrial waste issues. The four most common corrective actions are listed below:

Corrective Action	Percent of Corrective Actions
Improve or create spill response procedures	17%
Storm drain facility needs to be cleaned	14%
Improve or purchase adequate spill response materials	13%
Properly educate employees about spill response procedures	13%

Additional information, including a detailed list of corrective actions at each site inspected, will be provided in an upcoming SPU source control program update (SPU 2009b, in preparation).

A total of 114 illicit connections or illicit discharges to the storm drain system have been discovered since the business inspection program began in 2003.

3.1.2 Ecology NPDES Inspections

Ecology issues NPDES permits for some businesses in the LDW. While the permits limit and control the discharge of a number of water quality pollutants, they do not necessarily control contaminants that pose a threat to sediments, such as PCBs, phthalates, arsenic, mercury, and PAHs. As of June 2009, Ecology has approximately 112 NPDES permits on record. The permit types are described in detail in the July 2007 Source Control Status Report (Ecology 2007b).

Ecology is continuing to inspect NPDES-permitted facilities to ensure compliance with permit conditions. In addition, Ecology's Water Quality (WQ) Division has been visiting facilities as needed to determine whether a permit is required. Recent inspections (see Section 3.1.3 below) have identified numerous facilities that may need to apply for NPDES permits. Ecology will follow up with these facilities to ensure that they submit an application for a stormwater permit or a Conditional No Exposure Certificate, as appropriate.

3.1.3 Urban Waters Initiative

The Urban Waters Initiative, a component of the Puget Sound Initiative, proposed a comprehensive, multi-program approach to:

- Identify potential sources of contamination,
- Ensure that facilities are both permitted (if applicable) and in compliance with their permit conditions,
- Increase inspections of regulated facilities,
- Assist in the development of appropriate source control measures,
- Provide assistance on toxics reduction and pollution prevention, and
- Build capacity at the local level to safely manage and reduce toxics at small businesses and households.

The initiative is described in more detail in the May 2008 LDW Source Control Status Report (Ecology 2008a).

SPU, Ecology and other environmental inspectors teamed up and persevered to stop a discharge of hot tank and paint booth waste from entering the LDW via storm drains and a small creek.

During a routine inspection, Ecology noticed that the paint booth at a facility in the LDW basin did not have the proper local permits and asked King County and SPU to follow up. Inspectors found that the paint booth discharged to a storm drain rather than to the sanitary sewer, and after sifting through conflicting information provided by the owner, also discovered a hot tank that had not been reported. The hot tank discharged through a small hole in an exterior wall to an outside storm drain, and had been doing so for almost 40 years.

Two King County industrial waste inspectors, one Ecology water quality inspector, one Ecology source control inspector, two Ecology hazardous waste inspectors, three SPU inspectors, and one PSCAA inspector were needed to sort through the complex compliance issues. The nine site visits conducted to ensure compliance, plus the many hours spent writing reports, logging photographs, preparing enforcement documents, participating in telephone calls and meetings, conducting research, developing maps, sharing information, and collecting samples, totaled at least 100 hours of staff time to collect sufficient information to find and resolve these problems.

Ecology took regulatory action and issued a penalty of $20,000 based on SPU documentation.

Ecology's WQ and Hazardous Waste & Toxics Reduction (HWTR) inspectors, along with SPU inspectors and TCP staff, continued to coordinate inspections of facilities and priorities to avoid overlap in the field. King County coordinates with Ecology and SPU in conducting inspections and has provided a list to Ecology of King County Industrial Waste (KCIW) permittees in the LDW.

The multiple-agency team continued to hold monthly meetings to coordinate inspections and cross-train during this reporting period. The number of referrals, follow-up inspections, and resulting enforcements is presenting a significant challenge to the WQ inspectors. Additional WQ staff is needed to handle the volume of work generated by the multi-agency inspections (Ecology 2009h).

Between September 2008 and April 2009 (the most recent date for which statistics were available at the time this Status Report was prepared), the Ecology inspectors conducted 101 lead inspections, 37 follow-up inspections, and provided backup on 30 additional facility inspections in the LDW Urban Waters area, as listed in Appendix C.[3] Inspections were conducted at a variety of business types including: wholesale/retail, chemical formulators, vehicle/equipment repair, machine shops, transportation-related businesses, electronics repair, printers, and boat/ship repair and manufacturing. The most common compliance concerns encountered include the following, listed by percent occurrence of violation:

Compliance Concern	Percent of Inspected Facilities
Need to evaluate coverage under Industrial Stormwater General Permit	42%
Improper outside storage of product or waste	34%
Compliance with dangerous waste regulations	27%
Need to inspect and/or clean storm drain structures	20%
Seek authorization/permit for industrial waste discharge to sanitary sewer	14%
Discontinue discharge of process water to storm drain system	11%
Register air pollution source with PSCAA	6%

During the inspections, a common corrective action required of facilities was to move used oils, fuels, liquid products, and waste materials from outside storage to covered/contained storage or to disposal. This makes it less likely that contaminants will be transported to the LDW via stormwater. Inspectors found the following wastes and materials stored improperly:

- 3,100 gallons of used oil
- 975 gallons of fuels
- 330 gallons of product containing halogenated organic compounds
- 55 gallons of pentachlorophenol pesticides
- 4,500 gallons of liquid waste, 700 gallons of which contained phthalates

[3] Information provided by the Urban Waters inspectors did not include information on facility locations within specific drainage basins/source control areas. Facility inspections are discussed in more detail for each source control area in Section 4 and 5 when possible.

- 1 ton of PCB materials
- 200 pounds of nitrate oxidizer solids
- 5,000 pounds of abandoned wastes

In addition, 11 spills or discharges to the storm drain system were stopped and/or cleaned up. These include:

- Waterfall paint booth discharge to the storm drain system stopped
- Hot tank discharge to the storm drain system stopped
- Lead-contaminated washwater discharge to the street stopped
- Fish ice and tote cleaning discharge to the storm drain system stopped (two instances)
- Iron phosphate rinse discharge to the ground stopped
- Leaking trash compactor discharge to the storm drain system stopped
- Caustic hot tank discharge to the ground stopped
- Non-contact cooling water discharge to the storm drain system stopped
- Diesel spill to ground identified, stopped, and spill response conducted
- Selenium patina wastewater disposal to storm drain system stopped

Examples of the types of problems observed during the inspections are shown on the following pages.

Potential Sources of Contamination: Releases from Spills, Waste Disposal, and Industrial Processes

Compost leachate draining from box to nearby ditch

Fish tote cleaning and fish ice disposal off of loading dock

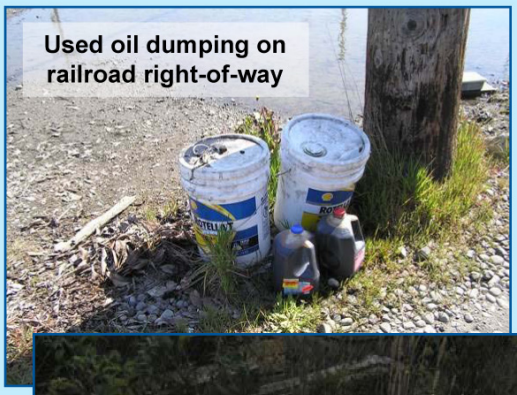
Selenious acid used outside and washed to storm drain

No plan or supplies to act upon a spill

Creative discharge to storm drain

Potential Sources of Contamination: Abandoned Wastes

Televisions in parking lots

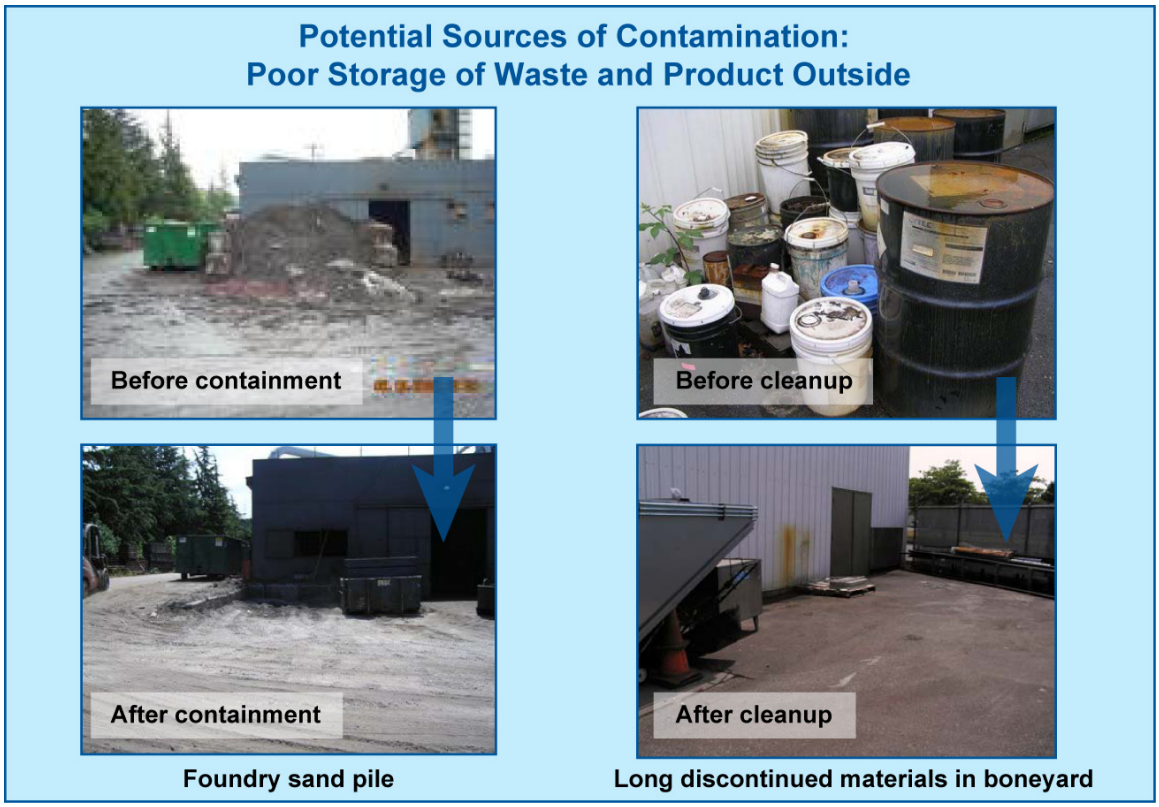


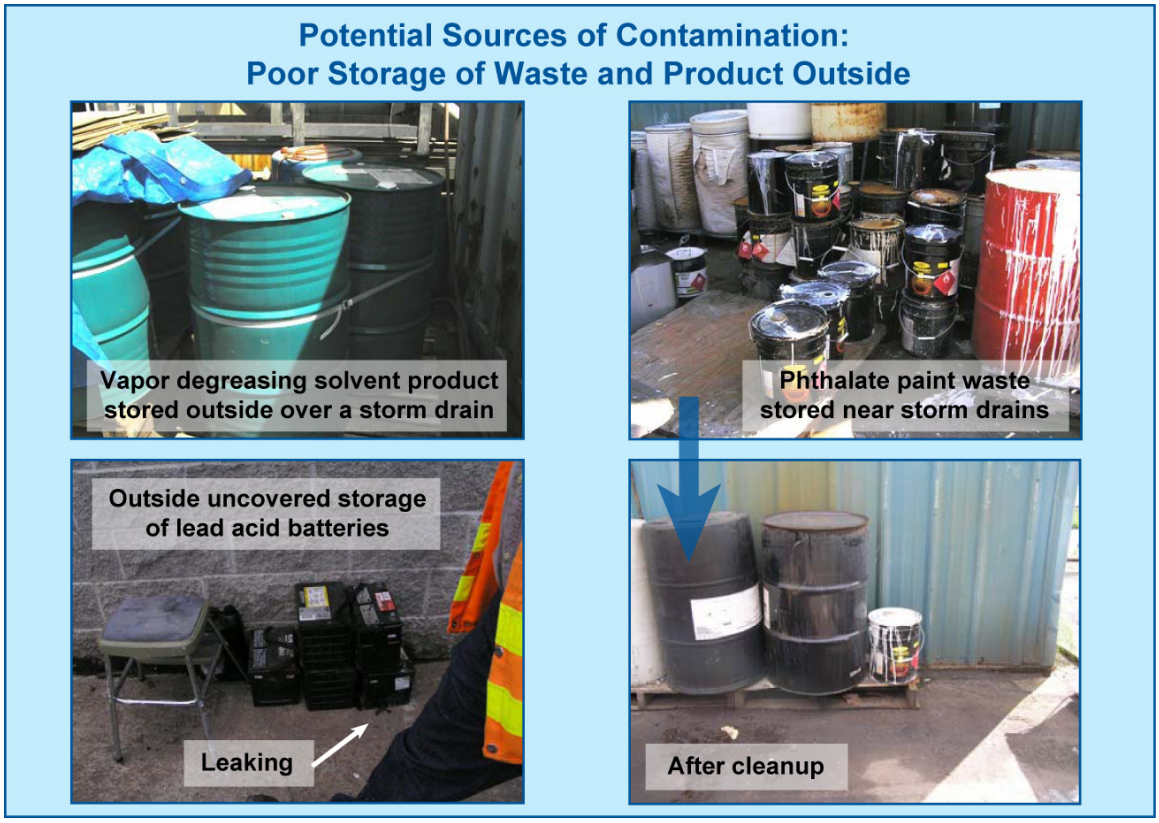
Used oil dumping on railroad right-of-way

Abandoned waste behind businesses

Illegal dumping on roadway rights-of-way


Potential Sources of Contamination: Abandoned Wastes
Before cleanup
After cleanup


Potential Sources of Contamination:
Poor Storage of Waste and Product Outside
Before containment
After containment
Foundry sand pile
Before cleanup
After cleanup
Long discontinued materials in boneyard



3.2 Source Tracing

SPU and King County have been conducting source tracing and identification sampling activities since 2003 to support source control efforts (King County and SPU 2004, 2005a, 2005b). Source tracing sampling is designed to identify sources by strategically collecting samples at key locations within the drainage/combined sewer service areas. Source identification sampling focuses on product testing to determine whether specific products contain chemicals that are a concern for waterway sediments.

Source tracing samples have been collected at the following locations to identify sources of chemicals of concern (Figure 4):

- In-line sediment traps installed in the storm drain system,
- Onsite catch basins,
- Catch basins in the public right-of-way, and
- In-line grab samples from storm drain main lines.

Storm drain solids data are compared to the Washington State Sediment Management Standards (SMS) to provide a rough indication of overall quality. The SMS include the Sediment Quality Standards (SQS), which identify surface sediments that have no adverse effects on biological resources, and Cleanup Screening Levels (CSL), which are used as an upper regulatory threshold for making decisions about source control and cleanup. For organics, the measured dry weight concentrations are organic carbon (OC) normalized to allow comparison to the CSL/SQS.

Alternatively, if OC-normalized data are unavailable or if total organic carbon (TOC) concentrations are outside the accepted range (0.5 to 4.0 percent), the storm drain solids data have been compared to the Lowest Apparent Effects Threshold (LAET) or Second Lowest Apparent Effects Threshold (2LAET) values, which are functionally equivalent to the SQS and CSL, respectively (Windward 2008d). The LAET and 2LAET values are expressed in terms of dry weight (DW) concentrations. In some cases, OC-normalized data may be available for only a portion of a data set (e.g., data from sediment traps at Slip 4); in these cases, the LAET/2LAET values have been used for screening purposes to allow for sample comparisons.

For petroleum hydrocarbons, MTCA Method A Soil Cleanup Levels are used for comparison to storm drain solids concentrations.

In this document, values described above (SQS/CSL, LAET/2LAET, and MTCA Method A) that are used for comparison to storm drain solids data are referred to as "storm drain screening values." It should be emphasized that none of these values apply to storm drain solids in a regulatory sense. It is important to note that any comparison of this kind is most likely conservative given that sediments discharged from storm drains are highly dispersed in the receiving environment and mixed with the natural sedimentation taking place in the system.

3.2.1 Outfalls

Approximately 250 outfalls were identified within the LDW study area based on a comprehensive survey of outfall or outfall-like structures terminating in the LDW conducted in 2004 by SPU, information from the Phase 1 RI, and updated information from Ecology, EPA, the City of Seattle, the City of Tukwila, the Port of Seattle, King County, and Boeing. The July 2007 Source Control Status Report listed 39 "unknown" outfalls. Of these, 17 have been resolved and are now identified as private outfalls, abandoned outfalls, or in some cases were determined not to be an outfall based on subsequent investigation. As identified in the May 2008 Source Control Status Report (Ecology 2008a), a total of 22 outfalls are currently identified as a "pipe of unresolved origin and/or use." The source of discharge, if any, to these outfalls needs to be determined; this is considered a source control action item (Table 2).

3.2.2 In-line Sediment Trap Samples

In-line sediment traps consist of a small bracket mounted inside the collection system pipe that holds a wide-mouth sample bottle. Traps are installed at selected locations in the drainage system to identify and isolate problem areas. Samples represent contributions from relatively large areas (>50 acres). They are installed for a period of 4 to 6 months to passively collect solids in the stormwater flow passing that location.

Traps were previously installed in the following areas (Figure 4):

- Six sites in the Diagonal Avenue CSO/SD drainage basin (2003),
- Ten sites in the Slip 4 drainage basin (2005), and
- Five locations in the Norfolk CSO/SD basin (2007).

Table 2. General Source Control Action Items

Action Item	Priority	Responsible Party	Status	Estimated Completion Date	Date Completed	Notes/Follow-On Actions
Prepare semi-annual LDW Source Control Status Reports	Medium	Ecology	Ongoing	NA		
Locate/track 22 "unknown" outfalls	Medium	Ecology, SPU	Planned	TBD		
Conduct sampling of bank soils and high intertidal sediments	Medium	Ecology	Planned	TBD		
Monitor upland spills	Low	Ecology	Ongoing	NA		
Continue source control and NPDES inspections as needed within LDW drainage basin	Medium	SPU, Ecology	Ongoing	NA		
Collect storm drain system solids samples (in-line and grab samples) as needed to conduct source tracing within the LDW drainage basin	Medium	SPU	Ongoing	TBD		
Continue study of the air-to-stormwater-to-sediment contaminant pathway	Medium	City of Tacoma, City of Seattle, King County, Ecology, EPA	Ongoing	TBD		
Evaluate and implement stormwater source control and treatment options to address air-to-stormwater-to-sediment pathway, as appropriate	Medium	City of Tacoma, City of Seattle, King County, Ecology, EPA	Planned	TBD		
Continue public involvement and outreach efforts	Medium	Ecology, EPA, King County, Duwamish River Cleanup Coalition (DRCC)	Ongoing	NA		
Complete development of LDW Source Control Database	High	Ecology	In Progress	November 2009		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

NA – Not applicable
TBD – To be determined

Sampling results for these sediment traps are provided in Appendix D. Results are summarized in Section 4 for the source control areas in which they are located (EAA-1, EAA-3, and EAA-7).

In 2008, Ecology signed an interagency agreement with the City of Seattle to conduct source tracing sampling. As part of this agreement, SPU installed sediment traps at 20 locations in the LDW study area, including areas on King County International Airport (KCIA) and unincorporated King County (Figure 5). Sediment traps were installed in the following storm drain basins.

- KCIA – three locations in non-Slip 4 drainage basins
- SW Idaho Street SD – three locations
- 1st Avenue S SD, west side – four locations
- SW Kenny Street SD – one location
- Highland Park Way SW SD – two locations
- 7th Avenue S SD – three locations
- S 96th Street SD – three locations
- Hamm Creek – one location

Sediment trap samples were most recently collected in March–April 2009; results of the interagency sediment trap samples are provided in Appendix E. Zinc, total petroleum hydrocarbons (TPH), PAHs, bis-2-ethylhexylphthalate (BEHP), butylbenzylphthalate (BBP), PCBs, 4-methylphenol, benzoic acid, and benzyl alcohol were detected in one or more sediment trap samples at concentrations above storm drain screening values. Sample ID-ST1 (SW Idaho SD) contained the highest concentrations of PAHs (total high molecular weight PAHs [HPAH] at 109 mg/kg DW) and phthalates (BEHP at 20 mg/kg DW, BBP at 1.2 mg/kg DW). Zinc (51 to 918 mg/kg DW), BEHP (<0.043 to 20 mg/kg DW), and BBP (<0.019 to 1.2 mg/kg DW) were detected at elevated concentrations in most of the sediment traps that were sampled. PCBs were detected in three sediment trap samples (0.279 mg/kg DW in the SW Idaho SD, 0.264 mg/kg DW in the 7th Avenue S SD, and 11.0 mg/kg DW in the KCIA-Jorgensen SD).

3.2.3 Catch Basin and In-Line Solids Samples

A catch basin is a storm drain structure that contains a sump to capture sediment and other debris before it can enter the conveyance system. Catch basin samples are grab samples of solids that has accumulated in the catch basin sump. Catch basins collect runoff from the nearby area (<0.5 acre). These samples are used to characterize contributions from specific sites and confirm whether they are sources of pollutants to the drainage system.

In-line sediment samples are grab samples collected from manholes located on the drainage mainline, and represent contributions from the entire drainage basin upstream of the sampling location. In-line sediment samples are usually collected prior to installing a sediment trap or before and after cleaning the drain to characterize the chemical quality of sediment in the storm drain system.

As of December 2008, SPU had collected 109 onsite and 106 right-of-way catch basin samples in the LDW study area as part of their source tracing efforts (Figure 4). In addition, over 200

sediment and soil samples were collected from the public right-of-way and adjacent properties near EAA-5 (Terminal 117) as part of an emergency cleanup conducted by SPU in 2004–2005. Samples included catch basin solids, street dust, and soil samples from the public right-of-way and adjacent yards. A recent review of the 2005 data revealed elevated levels of dioxin in a street dirt sample collected from an unpaved portion of the road shoulder; the street dirt and underlying soil were subsequently removed as part of an interim action cleanup by the city. This issue is discussed in more detail in Section 4.5.1 (Terminal 117 and Adjacent Streets).

Onsite catch basin samples have been collected at sites of interest identified during the business inspections or simply at sites where sufficient solids was available for chemical analysis. Results for all samples will be published in a future SPU source tracing progress report (in preparation).

Between January 2002 and December 2008, SPU, Seattle City Light (SCL), and King County collected 100 in-line solids samples from various locations in the Diagonal Avenue S CSO/SD, 7th Avenue S and 2nd Avenue S storm drains in South Park, S Myrtle Street SD, King County Airport SD#3/PS44 Emergency Overflow (EOF), I-5 storm drain at Slip 4, Georgetown flume, and the Norfolk CSO/SD/EOF. Results for all samples will be published in a future SPU source tracing progress report (in preparation).

The Ecology-SPU interagency agreement described in Section 3.2.2 above includes funding to collect catch basin samples in areas where there has been little or no sampling to date. Under this agreement, SPU has collected 119 in-line, catch basin, and dirt samples. Sampling locations associated with the interagency agreement are shown on Figure 5. Sample results are provided in Appendix E, and are summarized in Sections 4 and 5 for the source control areas in which they are located.

The catch basin and in-line sampling has helped to identify a number of pollutant sources to the LDW (SPU 2009c):

- Seattle Iron & Metals, 601 S Myrtle Street: arsenic, copper, mercury, lead, zinc, PCBs, BEHP
- Seattle Barrel, 4716 Airport Way S and 4520 7th Avenue S: mercury
- Former Sternoff Property, 7123 East Marginal Way S: PCBs
- Chemithon, 5430 West Marginal Way SW: PCBs
- Independent Metals, 7758 8th Avenue S: copper, lead, mercury, zinc, PAHs, BEHP, PCBs
- Marine Lumber, 525 S Chicago Street: arsenic

SPU and EPA source tracing efforts resulted in elimination of a PCB source to the LDW.

A solids sample collected from a catch basin in a city right-of-way in 2005 contained 17.5 mg/kg DW PCBs. While investigating the source of the PCBs, SPU inspected businesses in the area. During an inspection at the former Rainier Brewery property in October 2005, SPU sampled solids in trench drains and catch basins in the tank farm area, parking lot, and north of the loading dock. Concentrations of PCBs up to 2,200 mg/kg DW were detected. SPU directed the property owner to properly dispose of the sediment; jet-clean all outdoor inlets, trench drains, catch basins, and pipes on the property; conduct recommended additional sampling; and notify Ecology of the PCB concentrations in sediment.

In January 2008, SPU confirmed that concentrations of PCBs (8.4 to 189 mg/kg dry weight) were still elevated in sediment collected from catch basins on the north end of the property. These catch basins drain to the Diagonal Avenue S SD system on Airport Way S. The property owner jetted the storm drains in January 2008 and cleaned the catch basins in the portion of the property that drains to the Diagonal Avenue S CSO/SD; SPU jetted lines and cleaned catch basins downstream of the property along Airport Way S. SPU resampled a catch basin on Airport Way S and S Stevens Street in February 2009; the PCB concentration in the sample was 0.5 mg/kg DW.

In March 2009, EPA performed a PCB compliance inspection of the Rainier Commons facility. EPA inspected transformers, electrical equipment associated with an elevator, exterior paint, and the storm drain system (USEPA 2009a). The EPA inspectors visited the presumed locations of seven of nine historical transformers. No PCB transformers were found in the Rainier Commons buildings during the inspection.

Paint samples were collected from the exterior wall of Building 13 and paint chips were collected from the driveway between the building and the parking lot. PCBs were present at concentrations up to 10,000 mg/kg in the paint samples. The building had been repainted in 2005 in an attempt to encapsulate the PCB-contaminated paint. The property owners intended to clean the exterior walls and repaint in 2009. The EPA inspectors also collected a sediment sample from the storm drain catch basin between Buildings 3 and 13. PCBs were present in the sample at 105 mg/kg. Cleanup actions were scheduled to be completed during Summer 2009.

3.2.4 Source Sediment Comparisons

Comparisons between different types of source tracing samples are complicated by the limited number of samples collected and possible biases introduced by the sampling strategies employed for each source type. General observations based on the source tracing data collected through December 2008 are listed below (SPU 2009b, in preparation):

- Arsenic and mercury were detected in 46 percent and 62 percent of samples, respectively, with highest concentrations in samples collected from the North Boeing Field area (EAA-3). Mercury concentrations were also elevated in one of two samples collected from roadways draining to the Trotsky inlet (EAA-2). Zinc was detected in all of the samples analyzed.
- PCBs were detected in 85 percent of the source tracing samples; with the exception of known problem areas (former Rainier Brewery site and North Boeing Field), concentrations of PCBs are fairly comparable, with average and median concentrations ranging from 0.02 to 0.93 mg/kg DW. PCB concentrations in the problem areas were higher, with average concentrations of 8.6 to 1,600 mg/kg DW and median concentrations of 0.76 to 758 mg/kg DW.
- BEHP was detected in all of the source samples; concentrations varied from less than 0.1 to over 100 mg/kg DW. Average concentrations were higher in the onsite catch basin samples (32.9 mg/kg DW) and in-line solids from storm drains discharging to Slip 4 (31.5 mg/kg DW) than other sources (1.5 to 8.5 mg/kg DW).

3.3 Site Assessment and Cleanup

During SCAP development, Ecology and its contractors identify contaminated properties that may recontaminate a source control area. The contractors review available information about each property and prepare an assessment of whether the site poses a threat to the source control area. The detailed information on each property is reported in either a Property Review Report (Duwamish/Diagonal Way, Terminal 117, and Slip 4 source control areas) or in a Data Gaps Report (all other Source Control Areas). As of June 30, 2009, Ecology and its contractors had conducted assessments on 145 properties in 15 source control areas (Table 3). These are shown in Figure 6.

The investigation or cleanup of a contaminated property may be performed before a SCAP is written. This may occur when an owner wants to expedite cleanup or Ecology considers it necessary for source control. Site characterization or cleanup is in progress at several facilities that are known or suspected threats to LDW sediments (Figure 6).

EPA is managing five sites under the Resource Conservation and Recovery Act (RCRA) and/or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):

- Terminal 117 (EAA-5)
- Rhone-Poulenc (RM 2.9-4.4 East)
- Boeing Plant 2, including part of Jorgensen Forge (EAA-4)
- Boeing Former Electronics Manufacturing Facility (EMF)
- Slip 4 Early Action Area cleanup, including the Georgetown Flume outfall replacement

Ecology is managing the following sites under MTCA:

- Philip Services Georgetown (RM 1.2-1.7 East) – Consent Decree issued January 2007
- General Electric–Dawson Street Plant – Agreed Order signed May 2007
- Jorgensen Forge, upland of the EPA-managed area (EAA-4) – Agreed Order signed July 2007
- Capital Industries (RM 1.2-1.7 East) – Agreed Order signed November 2007
- Art Brass Plating (RM 1.2-1.7 East) – Agreed Order issued December 2007
- Blaser Die Casting (RM 1.2-1.7 East) – Enforcement Order issued March 2008
- North Boeing Field/Georgetown Steam Plant (EAA-3) – Agreed Order signed August 2008
- 8801 Site (RM 3.9-4.4 East) – Agreed Order signed September 2008
- Glacier Northwest/Reichhold Chemical (RM 1.3-1.6 West) – Agreed Order signed May 2009
- Fox Avenue Building (RM 2.3-2.8 East) – Agreed Order signed May 2009
- South Park Landfill – Agreed Order signed May 2009
- Duwamish Shipyard (RM 1.3-1.6 West) – Agreed Order signed July 2009
- Crowley Marine Services (EAA-3) – Agreed Order signed July 2009
- Industrial Container Services/Trotsky Property/Former Northwest Cooperage (EAA-2) – Agreed Order negotiations in progress
- Boeing Isaacson/Thompson (EAA-6) – Agreed Order negotiations in progress

Table 3. Property Assessments Completed, 2003 through June 2009

Source Control Area	Property
EAA-1 (Duwamish/Diagonal) 5 properties	Chevron USA Site No. 4097 (Chiyoda Property) Container-Care International, Inc. (Port of Seattle Terminal 106) Federal Center South Janco United Transportation Services CFS (Port of Seattle Terminal 106W/106NW)
EAA-2 (Trotsky Inlet) 27 properties	Alaska Washington Company Alki Construction Company ATC Distribution Group Inc./Automatic Transmission Parts BJ Truck Wrecking Boyer Towing, Inc./Boyer Alaska Barge Lines/Boyer Logistics Cascade Mattress Factory Cunningham Manufacturing DaVinci Gourmet Douglas Management Company/Alaska Marine Lines Dock 2 Ferguson Construction Fox Plumbing & Heating Hurlen Construction Industrial Battery Systems J & M Stamp & Form Northwest Building Tech Inc NW Center for the Retarded Pacific American Commercial Pacific Northwest Fasteners Pacific Plumbing Supply PCT Construction Pioneer Human Services Trotsky Property (Industrial Container Services) Tucker-Weitzel Assoc. United Iron Works W.G. Wright and Associates Wells Trucking & Leasing WHECO
EAA-3 (Slip 4) 13 properties	Alaska Logistics American Avionics ARCO #5218 Aviation Fuel Storage/Shultz Distributing Boeing Plant 2 Crowley Marine Services First South Properties/Emerald Services Georgetown Steam Plant King County Airport Maintenance Shop King County International Airport (portion draining to EAA-3) Marine Vacuum Service North Boeing Field North Coast Chemical Company
EAA-4 (Boeing Plant 2/Jorgensen Forge) 3 properties	Boeing Plant 2 Jorgensen Forge King County International Airport (portion draining to EAA-4)
EAA-5 (Terminal 117) 4 properties	Basin Oil Boeing South Park South Park Marina Terminal 117
EAA-6 (Boeing Isaacson/Central KCIA) 21 properties	Aeroflight National Charter Network Airwest Repair Services (Airwest Sales & Services, Bicknell) Ameriflight, Inc. BAX Global, Inc. Boeing Isaacson

Source Control Area	Property
	Boeing Thompson Caliber Inspection, Inc. Clay Lacy Aviation Clay Lacy Aviation (Gateway USA, Flight Center, Flightcraft, Inc.) DHL Express (ABX Air, Airborne Express) Federal Drug Enforcement Administration Federal Express Perimeter Road Galvin Flying Services GSM, Inc. Hangar Holdings, Inc. (Vulcan, TAG Aviation, Former Shell Oil) King County International Airport (portion draining to EAA-6) Nordstrom, Inc. South Seattle Community College Aviation Department UPS Boeing Field Western Metal Products, Inc. Wings Aloft/Southeast "T" Hangars
EAA-7 (Norfolk CSO/SD) 7 properties	Affordable Auto Wrecking ARCO Gas Station Associated Grocers Boeing Developmental Center Boeing Military Flight Center King County International Airport (portion draining to EAA-7) Northwest Auto Wrecking
RM 0.0-0.1 East (Spokane St. to Ash Grove Cement) 3 properties	Ash Grove Cement Harbor Marina Corporate Center Port of Seattle Terminal 104
RM 0.9-1.0 East (Slip 1) 3 properties	Federal Center South Manson Construction Company Snopac Products, Inc.
RM 1.2-1.7 East (St. Gobain to Glacier Northwest) 7 properties	Art Brass Plating Blaser Die Casting Capital Industries Inc. Certainteed Gypsum, Inc. Longview Fibre Paper and Packaging Philip Services Corporation Saint Gobain Containers
RM 1.7-2.0 East (Slip 2 to Slip 3) 11 properties	Bank and Office Interiors Duwamish Marine Center Fittings, Inc. Former Consolidated Freightways Former Frank's Used Cars Former Taco Time Glacier Northwest, Inc. Seattle Biodiesel Seattle Department of Transportation Parcel Seattle Truck Repair/Evergreen Tractor WSDOT Parcel
RM 2.0-2.3 East (Slip 3 to SBW) 9 properties	Bunge Foods/Guimont Parcel/Dawn Foods Cascade Columbia Distribution/Fox Avenue Building Glacier Marine Services (Northland Services, Marine Power & Equipment) Riverside Industrial Park (Carmody Property) Seattle Distribution Center SCS Refrigerated Services Shultz Distributing South Seattle Community College V. Van Dyke
RM 2.3-2.8 East (SBW to Slip 4) 16 properties	Crowley Marine Services El Gallo D'Oro/James Dore Former Sternoff Parcel

Source Control Area	Property
	Fox Avenue Bldg/Bldg #2 (Great Western Chemical) Guimont Parcel/Dawn Foods/Bunge Foods Markey Machinery Company Nelson Trucking Nitze-Stagen/Frye Parcels Phil's Finishing Touch Puget Sound Truck Lines Seattle Boiler Works, Inc. Seattle City Light Parcel Seattle Iron & Metals Corporation Trim Systems Whitehead Company/Former Perkins Lot Whitehead Company/Former Tyee Industries
RM 3.9-4.4 East (Slip 6) 5 properties	Boeing Developmental Center Former Rhone-Poulenc Site King County International Airport (portion draining to Slip 6) Former PACCAR Site Museum of Flight
RM 1.3-1.6 West (Glacier Bay) 11 properties	Alaska Marine Lines (Parcel 1) Alaska Marine Lines (Parcel 2) Allen Property Chemithon City of Seattle Parks Duwamish Shipyard Glacier Northwest/Former Reichhold Chemical Klier-D.B. Property Former MRI Corporation/Terminal 115N Sayler Property Wise Property

In addition, Ecology contractors have collected site characterization samples at the following sites:

- Soil, groundwater, and sediment at Industrial Container Services/Trotsky Property/Former Northwest Cooperage (EAA-2) – April through July 2007
- Soil, groundwater, and sediment at Douglas Management Company (EAA-2) – June through July 2008
- Soil, groundwater, and bank sediment/soil at South Park Marina (EAA-5) – September 2007 through July 2008
- Soil and groundwater at Basin Oil (EAA-5) – May 2009

The total number of sites that need to be assessed in the entire LDW storm drain and CSO basin has not been estimated at this time.

3.4 Public Involvement

3.4.1 Public Outreach

Ecology works with EPA and stakeholders in an enhanced public participation effort for the LDW Superfund Site. Ecology public involvement activities are underway for all of the MTCA sites addressing source control issues within the LDW. Ecology coordinates with the Duwamish River Cleanup Coalition (DRCC) throughout the public involvement process. This may include such activities as coordination for public meetings and sharing of documents with DRCC for review, as appropriate.

In February 2009, DRCC published the Duwamish Valley Vision Map and Report, a representation of the future of the Lower Duwamish River Valley as envisioned by its residents, workers, businesses, visitors, and river users (DRCC 2009).

Due to a Washington State hiring freeze, the LDW public involvement position remains vacant. Members of the LDW team have been filling in with assistance to Upland Unit site managers with elements of public participation plans and fact sheets for South Park Landfill and Glacier Northwest/Reichhold Chemical, and have been attending monthly community involvement coordination meetings at EPA. Public involvement assistance capacity at Ecology remains limited (Ecology 2009h).

3.4.2 Business Outreach

King County worked with the City of Seattle to produce a poster about the most efficient, cost-effective Best Management Practices (BMPs) for preventing pollutants from entering sewer pipes and storm drains for LDW area businesses. The county did an initial distribution of the poster in April 2009, to companies and facilities that are authorized to discharge industrial wastewater into the combined sewer system within the LDW basin (West 2009).

3.5 Other City of Seattle and King County Activities

3.5.1 Seattle Street Sweeping Pilot

The City of Seattle conducted a pilot project in 2006/2007 to evaluate street sweeping as a tool to reduce the amount of pollutants discharged from city storm drains. New high efficiency street sweepers were used to remove street dirt and debris from designated streets in two residential areas (West Seattle and Columbia City) and one industrial area (Duwamish/Diagonal Way). At each test site, a 10 to 25 block area was divided into a control area and a sweep area. Both control and sweep areas were cleaned at the beginning of the pilot, establishing a baseline for analyzing whether street sweeping reduces pollutants and sediment.

The test area was swept every two weeks, but the control area was not swept. Catch basin solids, sweeper waste, and street dirt accumulations were measured every month from the test and control areas to evaluate the quantity of material removed by the sweeping effort. Catch basin, sweeper waste, and street dirt samples were also collected every month. These samples were composited on a quarterly basis and analyzed for metals, semivolatile organic compounds (SVOCs), PCBs, grain size, and TOC content.

Test results showed that street sweeping was effective in removing about 2,200 to 3,100 pounds of material per acre of street swept each year (SPU and Herrera 2009). Sweeping also reduced the amount of dirt per unit area of street in all three study areas. The amount of dirt on the street was 48, 74, and 90 percent less than the control (unswept) sites at the Duwamish/Diagonal Way, West Seattle, and Columbia City sites, respectively (SPU 2009b).

PCBs were detected in about 50 percent of the samples, with concentrations from 0.019 to 1.3 mg/kg DW (SPU 2009b). With the exception of one sweeper waste sample from West Seattle (which contained 1.3 mg/kg DW PCBs), PCB concentrations in the Duwamish/Diagonal Way study area (0.034 to 0.91 mg/kg DW) were typically higher than the concentrations measured in the two residential study areas (<0.019 to 0.073 mg/kg DW). Aroclor 1254 and 1260 were the most commonly detected PCBs.

Other contaminants found in the 45 to 55 samples of street dirt, sweeper waste, and catch basin samples analyzed included metals, petroleum hydrocarbons, and phthalates. Chemicals that exceeded Washington state sediment or soil standards and guidelines included: motor oil (82 percent), carcinogenic PAHs (78 percent), di-n-octylphthalate (65 percent), BEHP (60 percent), PCBs (44 percent), BBP (35 percent), di-n-butylphthalate (29 percent), zinc (18 percent), and chromium (15 percent) (SPU 2009b).

In addition to measuring mass removal rates and quantities, the pilot test also evaluated whether street sweeping reduced the rate of solids accumulation in catch basins, thereby reducing the frequency that catch basins need to be cleaned. Results showed that catch basins are relatively inefficient in removing solids, and that sweeping did not significantly affect the amount or rate of sediment accumulation in catch basins (SPU and Herrera 2009).

3.5.2 Surface Water Quality Complaints

Between July 2005 and December 2008 (the most recent date for which data were available), SPU inspectors responded to 181 surface water quality complaints in the LDW area. The most common complaint involved automobile-related fluids such as gasoline, diesel, oil, and antifreeze (43 percent of complaints). The remaining complaints involved a variety of materials that included wash water, sewage, sediment, chemicals (paint, solvent, acid), and general flooding (SPU 2009b).

3.5.3 King County CSO Technology Pilot

The King County Wastewater Treatment Division completed a Work Plan for its CSO treatment technology pilot program in 2008. The pilot program will assess the feasibility of CSO treatment technologies and help determine the best technologies to control LDW CSOs. The Work Plan incorporates feedback from stakeholders on technologies to consider for testing, and specific pollutants of concern. The current schedule calls for pilot testing to occur during the winter of 2009 (West 2009).

3.6 Other Ecology Activities

3.6.1 Source Control Database Development

Ecology started work on a web-based LDW Source Control Database in March 2005. Users will be able to track source control activities for each source control area, including site evaluations, chemicals of concern, location, actions taken, and parties responsible.

During the current reporting period, Ecology's contractor (Science Applications International Corporation [SAIC]) continued to enter information on source control activities into the database. In addition, various programming issues have continued to delay progress. Addition of data on source control activities for all of the source control areas with a final SCAP is expected to be completed by August 2009. The reporting function is currently in development. A publicly available version is planned but at this time no date has been established.

3.6.2 LDW Industrial Stormwater Monitoring Study

Ecology plans to collect and analyze samples of stormwater solids from selected, representative industrial stormwater facilities. The goal is to assess the potential for these types of facilities to contaminate sediments and to estimate the loading contribution to sediments. The project is the first step in determining if facilities covered under the Industrial Stormwater General Permit are potential sources of sediment recontamination.

Ecology's contractor, SAIC, installed sediment traps at eight facilities in October 2008; samples were collected and the sediment traps removed on April 28, 2009. Facilities sampled are intended to be representative of industry types and geographic locations within the LDW. Results are currently being evaluated.

3.6.3 Scoping of Lateral Loading Study

Ecology conducted preliminary scoping of a study to quantify contaminant loading to the LDW through stormwater runoff. The scoping effort, performed by SAIC, included conducting a site reconnaissance of potential outfall sampling locations; preparation of a summary of available catch basin, sediment trap, and stormwater data; review of methodologies to calculate contaminant loading from stormwater; and preparation of a Sampling and Analysis Plan and Quality Assurance Project Plan for stormwater, catch basin, and sediment trap sampling and analysis.

A Site Reconnaissance Report (SAIC 2009d) described the evaluation of 34 candidate outfalls and storm drain access locations; 15 of these were identified as suitable for stormwater sampling as part of a lateral loading study.

A Previous Studies and Existing Data Report (SAIC 2009e) reviewed chemical loading studies performed for the Portland Harbor Superfund Site and Thea Foss Waterway in Tacoma, and lateral loading analyses performed by SPU for city-owned storm drain and CSO discharges and a pollutant loading analysis conducted for the Green-Duwamish Watershed. Recommendations on loading calculation methodology were provided, as well as a summary of available storm drain solids data.

The preliminary scoping effort concluded that a stormwater lateral loading study would be a logistically challenging and costly effort.

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4.0 Source Control Activities: Tier 1 Areas

Based on results of the LDW Phase 1 RI, seven early action candidate sites were proposed. These EAAs, also referred to as Tier 1 areas, are shown in Figure 1. Tier 2 and Tier 3 areas are discussed in Section 5.

The potential for sediment recontamination associated with these EAAs is described in detail in the Data Gaps Reports and SCAPs, as cited in the text below for each EAA. These documents are available from Ecology's LDW Source Control website.[4] Source control actions that were conducted between 2003 and June 2007 are described in the July 2007 Source Control Status Report (Ecology 2007b); updates have been published as listed below:

- July 2007 to March 2008 ((Ecology 2008a), published in May 2008)
- April 2008 to August 2008 (Ecology 2008e, published in October 2008)

The current status report describes source control actions that were conducted from September 1, 2008 through June 30, 2009.

Tables 4 through 10 list action items that were identified for the seven EAAs for which final SCAPs have been completed. The tables include new source control action items that have been added since initial publication of the SCAPs. Source control activities conducted between September 2008 and June 2009 are described in the following sections. Properties for which no source control activities were conducted during this period are not discussed below; however, all identified actions items (completed, in progress, or planned) are listed in Tables 4 through 10.

Site maps are presented in Figures 7 through 14 to help identify locations discussed in the text below; these maps are located after Section 6. Additional figures are available in the referenced reports.

4.1 Early Action Area 1 (Duwamish/Diagonal Way)

EAA-1 and relevant adjacent and upland properties are shown in Figure 7. Figure 4 shows the extent of the Duwamish/Diagonal CSO/SD basin. Action items for this source control area are listed in Table 4.

Location	RM 0.1-0.9 East
Chemicals of Concern	BEHP, PAHs, lead, zinc, PCBs
Data Gaps Evaluation	June 2003 (SAIC 2003)
SCAP	December 2004 (Ecology 2004b)

Source control actions that are area-wide (i.e., associated with the entire Duwamish/Diagonal CSO/SD basin rather than a specific adjacent or upland property) are described below.

[4] http://www.ecy.wa.gov/programs/tcp/sites/lower_duwamish/lower_duwamish_hp.html

Source Control Actions

Business Inspections

- SPU continued conducting business inspections in the Duwamish/Diagonal Way basin during the current reporting period (September 2008 through June 2009). Inspections were conducted at 15 facilities in the Diagonal SD basin (Appendix B). All except ConGlobal Industries, First Choice Detail & Hand Car Wash, North Star Casteel, Seattle Barrel Company, and SCL – 3613 4th Avenue S were identified by SPU as being in compliance as of the end of June 2009 (Appendix B).
- SPU conducted inspections at three facilities in the Diagonal CSO basin; corrective actions have been identified for Skeeter's Auto Rebuild and U-Haul Center of Rainier.
- Ecology conducted numerous source control inspections within this source control area under the Urban Waters Initiative during the current reporting period, including inspections at Atlas Supply Co., B&G Machine, Inc., Cascade Machinery & Electric, Inc., ConGlobal Inc., Hedwall Architectural Iron, International Leasing Co., Inc., Meeco Manufacturing Co., Inc., Seattle Barrel & Cooperage Co., Seattle Radiator, Seattle Vocational Institute, Skyline Electric Manufacturing Co., Valley Rubber & Gasket Co., WA State Liquor Control Board, and Western Peterbilt, Inc. (Appendix C).

Source Tracing

- SPU continues to monitor storm drain particulates using sediment traps to identify sources of chemicals that may recontaminate sediments. Sediment traps have been installed at six sites in the Diagonal Avenue CSO/SD system. The most recent samples for which data are available were collected in September 2008 (Appendix D, Table D1). Zinc, TPH-oil, PAHs, BEHP, BBP, dimethylphthalate, 4-methylphenol, and PCBs were detected at concentrations above storm drain screening values. Because results have been fairly consistent over the last several monitoring periods, sediment trap sampling will be discontinued after the end of 2009.
- Under the interagency agreement between Ecology and SPU, a total of 27 solids grab samples were collected in the Duwamish/Diagonal CSO/SD basin during the period August 2008 through June 2009. These include:
    - eight right-of-way catch basin (CB) solids samples (RCB1, RCB36, RCB37, RCB204, RCB205, RCB215, RCB216, RCB217);
    - two onsite catch basin solids samples (CB203, RCB224);
    - 14 in-line solids samples (MH17, MH18, MH21a, MH207, MH208, MH209, MH210, MH231, MH232, MH233, MH234, MH236, MHT6Bx, T2A); and
    - three street dirt samples (CB204, RCB206, RCB218).

  Sample locations are shown in Figure 5; analytical results are presented in Appendix E.
- Two samples (RCB1 and RCB36) were collected where previous samples found elevated levels of lead and mercury. These two catch basins were resampled in November 2008 following cleaning that occurred in 2007. After cleaning, lead at RCB1 had dropped from

1,370 mg/kg to 220 mg/kg; mercury had dropped from (0.87–1.17 mg/kg to 0.2–0.26 mg/kg) (SPU 2009b).

- SPU has also begun resampling sections of the storm drain system that were jetted and cleaned in 2002–2004 to determine whether contaminant levels have remained low after cleaning (SPU 2009b). Lead, mercury, and zinc remain elevated in MH18, located on S Snoqualmie Street. SPU plans to conduct additional source tracing in 2009 to identify possible sources of these metals.
- Several samples were collected by SPU in the vicinity of the Seattle Barrel site (4716 Airport Way S and 7th Avenue S) in an effort to locate potential sources of elevated mercury in storm drain solids. Samples collected along the east side of 7th Avenue S at Seattle Barrel (RCB217), and downstream of Seattle Barrel on S Snoqualmie Street (MH208, MH18), contained mercury at concentrations above the SQS (0.48 to 2.20 mg/kg DW). Ecology is investigating. Sample results are provided in Appendix D.
- Under the interagency agreement described in Section 3.2, an in-line solids sample (MH206) was collected by SPU from the Nevada Street SD in January 2009. Zinc, fluoranthene, butylbenzylphthalate, and PCBs were detected in this sample above the storm drain screening values. Sample results are provided in Appendix D.
- Ecology hired SAIC to review existing information for facilities in the Duwamish/ Diagonal Way CSO/SD basin, including underground storage tank/leaking underground storage tank (UST/LUST) sites. A Supplemental Data Gaps Report is scheduled to be completed in August 2009.

4.1.1 Union Pacific Railroad Argo Yard

Current Operations	Rail transportation
Historical Operations	Unknown
Address	4700 Blk Denver Avenue S, Seattle 98134
Facility/Site ID	21429717
Chemicals of Concern	Petroleum hydrocarbons
Media Affected	Soil, groundwater

On March 12, 2009, a spill of over 10 gallons of hydraulic oil occurred at the Union Pacific Railroad (UPRR) rail yard at 4700 Denver Avenue, between ramps #1 and #2 (Ecology 2009b). Material was spilled to the railroad tracks and to the local storm drain. The cause of the spill was listed as equipment failure. Reportedly, no more than 5 gallons entered the storm drain.

Source Control Actions

- UPRR's contractor cleaned out the storm drain and flushed the line (Ecology 2009b).

4.1.2 Port of Seattle Terminal 108 / Former Chiyoda Property

Current Operations	Leased to ConGlobal Industries for container storage, truck chassis storage/repair (Eastern parcel) and chassis lay-down area (Western parcel)
Historical Operations	Sewage treatment plant; PCB-contaminated sediment treatment lagoons, bulk cement terminal
Address	4525 Diagonal Avenue S, Seattle 98108
Facility/Site ID	2344 (Chevron Seattle Terminal 4097)
Chemicals of Concern	PCBs, PAHs, cadmium, lead, chromium, petroleum hydrocarbons
Media Affected	Groundwater, soil

Source Control Actions

- The Port of Seattle submitted the final *Terminal 108 – Environmental Conditions Report* on January 23, 2009. The purpose of this report was to present and discuss the operational and development history of the Terminal 108 property, evaluate existing environmental data, and identify potential source control issues, focusing on long-term source control strategy efforts.
- The Port of Seattle is developing Source Control Strategy Plans for the Eastern and Western parcels to provide a framework to identify and assess source control issues on the property, determine the most appropriate and effective implementation and control systems (e.g., BMPs and remedial actions), and establish long-term monitoring procedures to assess source control performance and ongoing environmental conditions at the property (Windward 2008a). A schedule for completion of the Strategy Plans is currently being developed.
- The scope of Terminal 108 source control activities has been expanded to consider operations at the ConGlobal facility and the Port of Seattle's habitat restoration plan (Ecology 2009o).

4.1.3 General Services Administration (GSA) / Federal Center South

Current Operations	Government offices, motor pool
Historical Operations	Automobile assembly plant, U.S. Army warehouses/depots/offices
Address	4645 East Marginal Way S, Seattle
Facility/Site ID	10233917 (Federal Center South) 22526187 (U.S. DOI BIA) 84498157 (USAF Waterport Logistics Office)
Chemicals of Concern	Petroleum hydrocarbons
Media Affected	Soil, groundwater

Source Control Actions

- A Data Gaps Report (SAIC 2008c) and SCAP (Ecology 2009e) prepared for the RM 0.9-1.0 East (Slip 1) source control area determined that stormwater from most of this property is discharged to Slip 1, within the RM 0.9-1.0 East (Slip 1) source control area (see Section 5.2). According to a 1976 GSA sewer map reviewed during preparation of the Slip 1 Data Gaps Report, stormwater in the northwest corner of the Federal Center South property drains to the LDW within the EAA-1 source control area. Action items identified for Federal Center South are included in Section 5.2 with other Slip 1 Source Control Area properties.

4.1.4 Former JANCO-United / Lennox Industries Site

Current Operations	Air conditioning and heating storage warehouse
Historical Operations	Janitorial supply
Address	4412-4th Avenue S, Seattle 98108
Facility/Site ID	5568786 (Lennox Industries Inc)
Chemicals of Concern	Phthalates, chlorinated benzenes
Media Affected	Soil, stormwater

Source Control Actions

- PHSKC was scheduled to perform a Site Hazard Assessment (SHA) at this location in 2007 or 2008. The SHA has been deferred pending receipt of sampling results (see below).
- Ryan, Swanson & Cleveland hired CDM to install five groundwater monitoring wells at the property in April 2009; soil and groundwater samples were collected (Flannery 2009). Samples were analyzed for volatile organic compounds (VOCs) and SVOCs; preliminary results indicate the presence of 1,2-dichlorobenzene, 1,4-dichlorobenzene, naphthalene, 2-methylnaphthalene, 1-methylnaphthalene, acenaphthene, fluorene, phenanthrene, di-n-butylphthalate, BEHP, and di-n-octylphthalate in groundwater, and di-n-butylphthalate in soil. However, none of the detected concentrations exceeded the MTCA Method A or B cleanup levels (Morrill 2009). BEHP in monitoring well MW-2 (2.7 µg/L) exceeded draft groundwater-to-sediment screening level of 0.47 µg/L.[5] The property is currently owned by 4400 Building LLC but is reportedly being sold.

[5] These screening levels were developed to assist in the identification of upland properties which may pose a potential risk of recontamination of sediments at Slip 4 (SAIC 2006f). The screening levels incorporate a number of conservative assumptions, including the absence of contaminant dilution and ample time for contaminant concentrations in soil, sediment, and groundwater to achieve equilibrium. In addition, the screening levels do not address issues of contaminant mass flux from upland to sediments nor do they address the area or volume of sediment that might be affected by upland contaminants. Because of these assumptions and uncertainties, these screening levels are most appropriately used for one-sided comparisons. If contaminant concentrations in upland soil or groundwater are below these screening levels, then it's unlikely that they will lead to exceedance of marine sediment CSLs. However, upland concentrations that exceed these screening levels *may or may not* pose a threat to sediments; additional site-specific information must be considered in order to make such an assessment.

4.1.5 Rainier Commons / Former Rainier Brewery Property

Current Operations	Coffee roasting and storage, artist loft, two restaurants
Historical Operations	Brewery
Address	3100 Airport Way South
Facility/Site ID	9192461
Chemicals of Concern	PCBs
Media Affected	Stormwater

The former Rainier Brewery property is currently known as Rainier Commons.

In 2004/2005, elevated concentrations of PCBs (17.5 mg/kg DW at RC37) were found in catch basins along a city street near this property. Samples collected from catch basins at the property found PCB concentrations of 177 to 2,226 mg/kg DW. These catch basins drain to the Diagonal SD system on Airport Way S. In January 2008, concentrations of PCBs were still elevated (8.4 to 189 mg/kg DW) in solids samples collected from catch basins on the north end of the property. Storm drains were jetted and cleaned by the property owner, and catch basins in the portion of the property that drains to the Diagonal Avenue S CSO/SD were cleaned in January 2008. A sample collected in January 2008 from downstream catch basin RCB37 contained 2.3 mg/kg DW PCBs. SPU subsequently jetted lines and cleaned catch basins downstream of this property along Airport Way S (Ecology 2007b).

Source Control Actions

- In February 2009, SPU resampled downstream catch basin RCB37 on Airport Way S and S Stevens Street, in front of the Rainier Commons property (Figure 5). This sample contained 0.5 mg/kg DW PCBs, significantly lower than the 17.5 mg/kg DW found in 2004 and 2.3 mg/kg DW found in January 2008 (Schmoyer 2009a).
- In March 2009, EPA performed a PCB compliance inspection at Rainier Commons. EPA inspected transformers, electrical equipment associated with an elevator, exterior paint, and the storm drain system (USEPA 2009a). No PCB transformers were found in the Rainier Commons buildings during the inspection (USEPA 2009b).
- During the inspection, paint samples were collected from the exterior wall of Building 13, and paint chips were collected from the driveway between the building and the parking lot. PCBs were detected at concentrations up to 10,000 mg/kg DW in the paint samples, primarily as Aroclors 1254 and 1260 (USEPA 2009a). A storm drain solids sample from the storm drain catch basin between Buildings 3 and 13 contained 105 mg/kg PCBs (USEPA 2009a).
- A Cleanup Action Plan to remove PCB-containing paint from building exteriors and the storm drain system was prepared by CDM for Rainier Commons LLC in April 2009 (CDM 2009). EPA is reviewing the plan. Actions were scheduled to start in 2009.

Table 4. Source Control Action Items – Early Action Area 1 (Duwamish/Diagonal Way)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Diagonal Ave. S. CSO/SD	Conduct inspections of 200 businesses in the western portion of the Diagonal Avenue S CSO/SD basin	Medium	SCAP	SPU	Complete	--	March 2002	Over 90% of facilities in compliance with stormwater source control requirements; re-inspect as needed to achieve compliance.
	Remove accumulated sediment from the lower portion of the Diagonal Avenue S CSO/SD	High	SCAP	SPU	Complete	--	November 2004	Video-inspect to identify connections and potential dischargers, and to verify that sediment removal was complete.
	Video-inspection to identify connections and potential dischargers and to verify that sediment removal was complete	High	Follow-On	SPU	Complete	--	February 2005	
	Clean catch basins in the public right-of-way	Medium	New	SPU	Complete	--	June 2008	
	Conduct sediment trap sampling	High	New	SPU	Ongoing	2009		Sampling to be discontinued after 2009.
Duwamish/Diagonal Basin	Conduct first round of multi-agency business inspections	Medium	SCAP	SPU, King County	Complete	--	September 2004	Over 90% of facilities in compliance with stormwater source control requirements; re-inspect as needed to achieve compliance.
	Conduct second round of multi-agency business inspections	Medium	Follow-On	SPU, King County	Complete	--	2008	
Nevada Street SD	Investigate the Nevada Street SD to locate the outfall, identify connections, confirm drainage areas, and sample sediments	High	SCAP	SPU	Complete	--	June 2005	All manholes in the right-of-way were clean and could not be sampled; determine whether any further action is needed.
	Collect a sediment sample from the last manhole above the outfall	Medium	Follow-On	SPU	Complete	--	January 2009	Inline sediment sample collected; zinc, fluoranthene, butylbenzylphthalate, and PCBs detected slightly above the SQS/LAET. No further actions are planned.
ConGlobal (formerly Container Care Int'l)	Conduct inspection to confirm that all issues related to poor housekeeping and BMPs have been addressed	Low	SCAP	SPU, Ecology	Complete	--	May 2003	No further actions identified.
UPRR Argo Yard	Review existing information to assess the potential for sediment recontamination from this property	Low	SCAP	Ecology, SPU, UPRR	Complete	--	2005	Refer to King County for Site Hazard Assessment; source control staff will remain vigilant for evidence of contaminant infiltration.
	Conduct Site Hazard Assessment	Low	Follow-On	King County	Planned	TBD		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Terminal 108	Conduct groundwater investigation to quantify levels of chemicals of concern (COCs) in groundwater, obtain information about groundwater flow, and assess the potential for sediment recontamination	Medium	SCAP	Port of Seattle	Complete	--	October 2007	
	Develop Work Plan describing source control strategy to be implemented	Medium	New	Port of Seattle	Complete	--	February 2008	
	Develop Environmental Conditions Report; identify data gaps	Medium	New	Port of Seattle	Complete	--	January 2009	Develop Source Control Strategy Plans for Eastern and Western parcels.
	Develop Source Control Strategy Plan for Eastern parcel	Medium	New	Port of Seattle	In Progress	TBD		Schedule is being developed.
	Develop Source Control Strategy Plan for Western Parcel	Medium	New	Port of Seattle	In Progress	TBD		Schedule is being developed.
	Implement appropriate source control actions	Medium	New	Port of Seattle	Planned	TBD		Actions to be identified based on Strategy Plans.
GSA / Federal Center South	Investigate to determine whether this facility is a potential source of sediment recontamination	Low	SCAP	Ecology, EPA, SPU, GSA	Complete	--	June 2004	Clean and repair drainage system; correct housekeeping issues.
	Clean and repair storm drain system; correct housekeeping issues	Medium	Follow-On	GSA	Planned	TBD		See also action items identified for the RM 0.9-1.0 East (Slip 1) source control area.
Former JANCO-United, Inc. / Lennox Industries	Review existing information and conduct a site inspection to determine if wastes dumped on ground have been removed and to assess the potential for sediment recontamination	Low	SCAP	Ecology	Complete	--	December 2006	Data reviewed December 2006. Soil samples collected by EPA in 1984 contained VOCs and SVOCs; no record that the soil was removed or the illegal pipe to storm drain was sealed. Conduct Site Hazard Assessment.
	Conduct Site Hazard Assessment	Low	Follow-On	Public Health-Seattle & King County	Planned	TBD		Deferred pending review of groundwater data collected by property owner/agent.
	Review groundwater data collected under VCP; determine if further source control actions are needed	Low	New	Ecology	Planned	August 2009		
Rainier Commons / Former Rainier Brewery Property	Sample catch basin solids; identify required actions	Medium	New	SPU	Complete	--	January 2008	Require property owner/operator to take corrective action; verify completion.
	Require property owner/operator to take corrective action to remove catch basin solids; verify completion	Medium	New	SPU	Complete	--	January 2008	Piping and downstream catch basins cleaned; resample system in 2009 to confirm that PCBs have been controlled.
	Resample storm drain system to confirm that PCBs have been	Low	New	SPU	Complete	--	February 2009	Sample from downstream catch basin contained 0.5 mg/kg DW PCBs.

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	controlled.							
	Conduct cleanup and disposal of PCB-contaminated paint chips on the ground surface and in the storm drain system	High	New	EPA/Property Owner	In Progress	July 2009		
Other Upland Properties	Review files for 37 identified upland sites	Low	SCAP	Ecology	In Progress	August 2009		
	Review files for LUST sites; determine need for additional action	Low	SCAP	Ecology	In Progress	August 2009		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the EAA-1 SCAP
Follow-On	Action item is a follow-on to an action item identified in the EAA-1 SCAP
New	Action item identified after publication of the EAA-1 SCAP

4.2 Early Action Area 2 (Trotsky Inlet)

EAA-2 and relevant adjacent and upland properties are shown in Figure 8. Action items for this source control area are listed in Table 5.

Location	RM 2.1-2.2 West
Chemicals of Concern	PCBs, phthalates, mercury, lead, zinc, dichloro-diphenyl-trichloroethane (DDT), dieldrin
Data Gaps Evaluation	February 2007 (SAIC 2007b); December 2008 – Douglas Management Company property (SAIC 2008d); June 2009 – Boyer Towing property (SAIC 2009c)
SCAP	June 29, 2007 (Ecology 2007a)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Source Control Actions

Business Inspections

- SPU conducted one business inspection in the storm drain basin that discharges to the Trotsky inlet via the 2nd Avenue S SD during this reporting period. The facility was in compliance with applicable regulations. Facilities inspected are listed in Appendix B; inspection locations are shown in Figure 3.
- Ecology participated in two source control inspections within this source control area under the Urban Waters Initiative during the current reporting period, including Industrial Container Services (see Section 4.2.1 below). Facilities inspected are listed in Appendix C.

Source Tracing

- Under the interagency agreement between Ecology and SPU, a total of six right-of-way catch basin samples (RCB200b, RCB201, RCB202, RCB203, RCB209, RCB175) were collected in the 2nd Avenue S SD basin during the period August 2008 through June 2009. Sample results are presented in Appendix D; sample locations are shown in Figure 5.

  Phthalates are of particular concern in this SD basin: Five of the six samples exceeded the storm drain screening value for BEHP, with concentrations as high as 18.0 mg/kg DW in RCB202; all six samples exceeded the screening value for BBP (0.14 to 1.0 mg/kg DW); and one sample exceeded the screening value for dimethylphthalate (0.12 mg/kg DW).

  Metals were present at concentrations above the SQS in three of the samples: lead in one sample (521 mg/kg DW in RCB203), and zinc in three samples (427 to 521 mg/kg DW).

  PCBs were present at a concentration above the storm drain screening value in one sample (RCB203), at 0.20 mg/kg DW. Benzyl alcohol exceeded the screening value in two samples (RCB203, RCB209), at 0.21 to 0.55 mg/kg DW.

4.2.1 Industrial Container Services / Trotsky Property / Former Northwest Cooperage

Current Operations	Steel drum reconditioning
Historical Operations	Same as above
Address	7152 1st Avenue S, Seattle 98108
Facility/Site ID	2154 (Industrial Container Services WA LLC)
Chemicals of Concern	PCBs, arsenic, chromium, copper, lead, mercury, zinc, PAHs, phthalates, chlorinated benzenes, phenols, TPH
Media Affected	Soil, groundwater, sediment

Source Control Actions

- Negotiations are continuing on an Agreed Order to conduct an RI/FS and prepare a draft Cleanup Action Plan. Ecology plans to submit the final version of the Agreed Order to the PLPs for signature during later summer 2009; the public comment period is expected to begin in October 2009 (Ecology 2009o).
- Ecology's contractor (SAIC) had previously submitted a data report for the soil, groundwater, intertidal sediment, and seep sampling conducted at the Trotsky property in 2007. An analysis of the finalized sampling data from the Trotsky Property was published in May 2009 (SAIC 2009b). The report concluded that soil and groundwater at the Trotsky Property is contaminated with chemicals at concentrations above MTCA cleanup levels and draft soil-to-sediment and groundwater-to-sediment screening levels. Contamination may be the result of historical drum reconditioning operations at this facility. The horizontal and vertical extent of soil and groundwater contamination is unknown (SAIC 2009b).
- PSCAA and Ecology conducted an inspection at Industrial Container Services on April 23, 2009. The inspection identified potential improper disposal of drum residues as "used oil"; these wastes may contain solvents, resins, dangerous waste residues, foods, lubricants, alcohols, and paints. At the time of the inspection, 60 drums of copper and zinc pesticides were awaiting processing (Jeffers 2009b).

4.2.2 Douglas Management Company / Alaska Marine Lines

Current Operations	Shipping container storage
Historical Operations	Shipbuilding, metal and salvage, sand & gravel batch plant, marine cargo handling
Address	7100 2nd Avenue S, Seattle 98108
Facility/Site ID	97573251 (Douglas Management Dock)
Chemicals of Concern	Petroleum hydrocarbons, PCBs, metals (arsenic, chromium, copper, mercury, and zinc), volatile organic compounds (VOCs), SVOCs
Media Affected	Soil, groundwater

Source Control Actions

- SAIC completed a site characterization report in May 2009, which presented results of sampling conducted in June/July 2008. Five groundwater monitoring wells were installed and four existing site wells were redeveloped and sampled. Soil samples were collected from the borings, and seep, bank soil, and groundwater samples were collected (SAIC 2009b). Results indicated the presence of metals (arsenic, chromium, lead), PCBs, benzene, and petroleum hydrocarbons at concentrations above MTCA cleanup levels. High concentrations of benzene (89 to 100 µg/L) were detected near the center of the Douglas Management Company property and in the vicinity of former underground fuel storage tanks and a fuel dispensing location (SAIC 2009b).
- In May 2009, SAIC prepared an update to the EAA-2 Data Gaps Report based on a review of responses to EPA's CERCLA 104(e) Request for Information letter, issued to Swan Bay Holdings/Douglas Management Company, and other new information about the Douglas Management Site (SAIC 2008d). The report assessed the potential for sediment recontamination associated with the Douglas Management Company property, and identified additional data gaps; these are listed in Table 5. Additional information is needed to assess the potential for contaminant transport to the LDW and the Trotsky inlet via stormwater, surface runoff, and groundwater; a follow-up inspection is also needed to confirm that current operations are in accordance with applicable regulations and codes.

4.2.3 Boyer Towing Property / Boyer Logistics

Current Operations	Freight loading/unloading, barge maintenance and repair, storage of heavy equipment and vehicles
Historical Operations	Residential, automobile wrecking yard (Parcels F and G), warehouse, vehicle parking
Address	170 S Orchard Street; 7200-7318 4th Avenue S; 7410-7417 4th Avenue S
Facility/Site ID	37926748 (Boyer Logistics, Parcels B and C)
Chemicals of Concern	None identified
Media Affected	None identified

Source Control Actions

- SAIC prepared a Supplemental Data Gaps Report for this property in June 2009 (SAIC 2009c), based on a review of responses to EPA's CERCLA 104(e) Request for Information Letters, issued to Boyer Towing/Boyer Logistics and members of the Halvorsen family, and other new information about the Boyer Towing property. Additional data gaps and source control action items were identified, as listed in Table 5.

Table 5. Source Control Action Items – Early Action Area 2 (Trotsky Inlet)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
2nd Avenue S SD	Collect storm drain outfall pipe sediment and water samples to evaluate whether contaminants are currently being transported to the EAA-2 inlet via this pathway.	High	SCAP	Ecology	Complete	--	August 2007	
	Evaluate results of outfall pipe sediment and water samples.	High	Follow-On	Ecology	Complete	--	May 2009	
	Collect additional in-line sediment samples to evaluate the levels of COCs with respect to sediment recontamination in this drainage.	High	SCAP	SPU	Complete	--	June 2009	Continue source tracing to identify sources of phthalates and other COCs.
	Continue source tracing to identify sources of phthalates and other COCs.	High	SCAP	SPU	Planned	2010		
	Conduct business source control inspections/re-inspections to verify that facilities comply with applicable regulations and BMPs and to conduct source control, as needed.	Medium	SCAP	SPU, Ecology	Complete	--	October 2008	Continue business inspections/ re-inspections as needed.
	Review responses to CERCLA 104(e) letters by Wells Trucking and Leasing, Inc. and Ferguson Enterprises, Inc.	Low	New	Ecology, EPA	Planned	December 2010		
Reservoir Overflow	Repair West Seattle Reservoir to remove source of water to the overflow pipe that discharges to the head of the inlet.	Low	New	City of Seattle	Planned	2010		
Industrial Container Services	Conduct additional site characterization to evaluate concentrations of COCs in groundwater, bank and intertidal sediments, and seeps.	High	SCAP	Ecology	Complete	--	August 2007	Identify additional data gaps based on sampling results.
	Issue CERCLA 104(e) letter to facility/site/property owners to obtain additional information on historic contamination sources.	Medium	SCAP	EPA	Complete	--	October 2006	Review responses to CERCLA 104(e) letter.
	Review responses to CERCLA 104(e) letter.	Medium	SCAP	EPA/Ecology	Planned	2010		
	Identify PLPs for this site.	Low	New	Ecology	Complete	2008		Negotiate Agreed Order for cleanup.
	Identify additional data gaps based on sampling results, and negotiate Agreed Order to conduct an RI/FS and prepare a Cleanup Action Plan.	Medium	Follow-On	Ecology	In Progress	Fall 2009		
	Investigate destination of roof drainage from northwest corner of property.	High	SCAP	King County/ Ecology/ SPU/ Industrial Container Services	Planned	August 2009		
	Evaluate the need for stormwater characterization (solids and whole water) from this facility if overflow occurs during heavy rainfall events.	Medium	SCAP	Ecology/ KCIW/ SPU	Planned	2010		Will be addressed under the Agreed Order.
Douglas Management Company	Conduct groundwater sampling along southern portion of property (adjacent to EAA-2 inlet) to evaluate potential for groundwater transport of	High	SCAP	Ecology	Complete	--	July 2008	

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	contaminants from this site. Collect bank and seep samples.							
	Identify additional data gaps based on sampling results, and determine actions needed to fill them.	High	SCAP	Ecology	Complete	--	May 2009	Additional action items identified based on Site Characterization Report (SAIC 2009b) and Supplemental Data Gaps Report (SAIC 2008d).
	Conduct cleanup as needed to eliminate sources of contaminants to EAA-2.	Medium	SCAP	Property owner/operator	Planned	2009 (if needed)		
	Review responses to EPA CERCLA 104(e) Request for Information letter issued to Swan Bay Holdings/Douglas Management Company.	Medium	SCAP	EPA/Ecology	Complete	--	December 2008	Supplemental Data Gaps Report prepared (SAIC 2008d); additional action items identified.
	Conduct groundwater sampling along the LDW shoreline to assess the potential for sediment recontamination via groundwater transport.	Medium	New	Ecology	Planned	2011		Action item identified in Supplemental Data Gaps Report.
	Conduct a re-inspection of the site to confirm that operations are in accordance with all applicable stormwater regulations; evaluate the potential for contaminant transport to the Trotsky inlet or LDW via surface runoff.	Low	Follow-On	Ecology	Planned	2010		Action item identified in Supplemental Data Gaps Report.
	Verify storm drainage pathway on the southern portion of the property.	Medium	SCAP	Ecology/SPU	In Progress	2009/2010		Review of 104(e) response could not confirm; request property owner to provide current storm drainage map.
	Request property owner to provide a map showing current storm drainage on the entire property, including locations of storm drains, catch basins, oil/water separators, and outfalls.	Medium	New	Ecology	Planned	2009/2010		Action item identified in Supplemental Data Gaps Report.
	If stormwater discharge to EAA-2 (including the Trotsky inlet to the south and the LDW shoreline to the north and east) is confirmed, assess the need for stormwater characterization (solids and whole water). Collect stormwater samples as needed.	Medium	SCAP	Ecology/ SPU/ Property owner/operator	Planned	2009/2010		
Boyer Towing	Review responses to EPA CERCLA 104(e) Request for Information letters issued to Boyer Towing, Boyer Logistics, and members of the Halvorsen family.	Medium	SCAP	EPA/Ecology	Complete	--	June 2009	Supplemental Data Gaps Report prepared (SAIC 2009c); additional action items identified.
	Review responses to EPA CERCLA 104(e) Request for Information letters issued to River View Marina and Mary Catherine Halvorsen.	Medium	New	Ecology	Planned	2009/2010		Responses from property owner/operator for Parcel D not included in previous review.
	Verify storm drainage pathway on the southern portion of the property.	Medium	SCAP	Ecology/SPU	Complete	--	June 2009	Stormwater from Parcels B, C, and E-L drains to 2nd Avenue S storm drain, per the Supplemental Data Gaps Report. Assess the need for stormwater characterization sampling.

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Assess the need for stormwater characterization (solids and/or whole water) and conduct review of facility's SWPPP.	Medium	Follow-On	Ecology/ SPU	Complete	--	June 2009	The most recent SWPPP is dated 1993 and should be updated.
	Request Boyer Towing to prepare an updated SWPPP for its operations at Parcels B and C.	Low	Follow-On	Ecology	Planned	2009		
	Review source tracing data collected by SPU for the 2nd Avenue S storm drain basin to identify whether the Boyer Towing owned or leased parcels are a potential source of contaminants to the Trotsky Inlet and the LDW.	Medium	New	Ecology	In Progress	2009		Preliminary review indicates phthalates and metals may be present at elevated concentrations.
	Determine if additional storm drain samples are needed.	Medium	New	Ecology/SPU	Planned	2009/2010		
	Request additional data regarding potential soil contamination at Parcels F and G; evaluate the need for additional characterization.	Medium	New	Ecology	Planned	2009/2010		Action item identified in Supplemental Data Gaps Report.
	Conduct source control inspections at tenant facilities on Boyer-owned property.	Low	SCAP	SPU	Complete	--	December 2007	
	Conduct source control inspection of new tenant facility at Parcel J (former Wells Trucking site).	Low	New	SPU/Ecology	Planned	2009		Action item identified in Supplemental Data Gaps Report.

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the EAA-2 SCAP
Follow-On	Action item is a follow-on to an action item identified in the EAA-2 SCAP
New	Action item identified after publication of the EAA-2 SCAP

4.3 Early Action Area 3 (Slip 4)

EAA-3 and relevant adjacent and upland properties are shown in Figure 9. Action items for this source control area are listed in Table 6.

Location	RM 2.8 East
Chemicals of Concern	PCBs, phthalates, PAHs, metals
Data Gaps Evaluations	Slip 4: January 15, 2004 (SEA 2004) Crowley and First South Properties: October 2006 (SAIC 2006c) Upland property reviews: October 2006 – February 2007 (SAIC 2006d, SAIC 2006a, SAIC 2006e, SAIC 2006b, SAIC 2007a, SAIC 2007e) North Boeing Field/Georgetown Steam Plant: February 2007 (SAIC 2007c)
SCAP	July 2006 (Ecology 2006); Slip 4 Status Report – February 2007 (SAIC 2007d)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Source Control Actions

Inspections

- During the current reporting period, SPU conducted six business inspections at four facilities in the Slip 4 storm drain basin. One of the four facilities was in compliance with stormwater codes and regulations as of the end of June 2009. A total of 12 corrective actions were identified. Facilities inspected are listed in Appendix B; inspection locations are shown in Figure 3.

Source Tracing

- Boeing and SPU have been sampling sediment traps in the Slip 4 storm drains since 2005.[6] Boeing collected samples from the seven sediment traps located on Boeing-leased property on December 3, 2008, and April 6, 2009. Results are presented in Table D2, and are described briefly below.

[6] Sediment traps have been installed at the following locations:
- T1 – Downstream end of the north lateral and north central lateral storm drain lines, upstream of the King County Lift Station that pumps stormwater to KC Airport SD#3/PS44 EOF.
- T2 and T2A – Downstream and upstream, respectively, of the Boeing-leased property along the south lateral storm drain line.
- T3 and T3A – Downstream and upstream, respectively, of the Boeing-leased property along the south central lateral storm drain line.
- T4 and T4A – Downstream and upstream, respectively, of the Boeing-leased property along the north central lateral storm drain line.
- T5 and T5A – Downstream and upstream, respectively, of the Boeing-leased property along the north lateral storm drain line.
- T6 – Intersection of S Hardy Street and Airport Way S, along the I-5 Storm Drain.

Copper, lead, mercury, and zinc were detected at concentrations above the SQS in both the upstream and downstream samples from the north lateral storm drain line (samples T5A and T5). Zinc was detected above the SQS at the King County Lift Station (sample T1). Mercury was detected at concentrations above the SQS in both the upstream and downstream sediment traps at the north lateral storm drain line (0.42 to 0.58 mg/kg DW in T5A, 0.7 to 1.0 mg/kg DW in T5).

PAHs continue to be detected at concentrations above the storm drain screening values in many of the sediment traps. Total HPAH in the April 2009 samples were 26.0 and 19.4 mg/kg DW in the upstream and downstream samples, respectively, from the north central lateral storm drain line (T4A and T4); 39.3 and 28.4 mg/kg DW in the upstream and downstream samples, respectively, from the north lateral storm drain line (T5A and T5); and 13.5 mg/kg DW at the King County Lift Station (T1).

Phthalates continue to be detected at concentrations above the storm drain screening values in many of the sediment traps; the most recent (April 2009) data indicate concentrations have increased since the previous sampling period. BEHP was detected at 24.0 and 34.0 mg/kg DW in the upstream and downstream samples, respectively, from the north lateral storm drain line (T5A and T5); 2.5 and 19.0 mg/kg DW in the upstream and downstream samples, respectively, from the north central lateral storm drain line (T4A and T4); and 7.3 mg/kg DW at the King County Lift Station (T1).

PCB concentrations continue to drop in comparison to results from 2006 and 2007, particularly along the north lateral storm drain line in sediment traps T5 (downstream sample from the north lateral storm drain line) and T1 (at the King County Lift Station), which previously contained the highest levels of PCBs:

Date Sampled	Total PCBs in Sediment Trap T5 (mg/kg DW)	Total PCBs in Sediment Trap T1 (mg/kg DW)
August 2005	24.0	10.0
March 2006	114	107
October 2006	800	110
January 2007	200	260
May 2007	183	420
October 2007	62.0	21.8
March 2008	16.0	7.60
July 2008	4.2	10.0
December 2008	3.1	19.0
April 2009	2.1	0.68

PCBs in sediment trap T3A (upstream end of the south central lateral storm drain line) were detected at 0.24 mg/kg DW, and PCBs in sediment trap T4 (downstream end of the north central lateral storm drain line) were detected at 0.34 mg/kg DW; both exceeded the LAET of 0.13 mg/kg DW.

Other chemicals detected in sediment traps at concentrations above the storm drain screening values during the current period reporting period include 4-methylphenol, benzoic acid, and phenol.

4.3.1 Crowley Marine Services

Current Operations	Cargo container storage, berthing facility, railroad operations
Historical Operations	Hydraulic parts manufacturing, lumber mill, pole-dipping, excelsior (wood packing material) manufacturing
Address	7400-8th Avenue S, Seattle 98108
Facility/Site ID	1940187 (Crowley Marine Services Inc. 8th Avenue S) 63123962 (Alaska Logistics LLC)
Chemicals of Concern	Arsenic, copper, PAHs, PCBs, phthalates, petroleum hydrocarbons
Media Affected	Sediment, soil, groundwater

Source Control Actions

- Ecology began negotiations with Crowley Marine Services in August 2008 for an Agreed Order to investigate contamination at the property. The Agreed Order is intended to produce an RI/FS and draft Cleanup Action Plan that will identify the nature and extent of the contamination and identify possible ways to clean up the site (Ecology 2008c).[7]
- Crowley Marine Services recently notified UPRR that they must develop and implement a stormwater management program at their facility, including sweeping of paved areas and cleaning of stormwater catch basins on a regular basis (SLR 2009).
- A composite sample was collected in July 2008 from two catch basins in the area of the property that drains to Slip 4. The catch basins were located on the downstream side of two separate storm drain lines with outfalls to the slip. Results showed the presence of the following chemicals at concentrations above the storm drain screening values (Robinson 2009c):

Chemical	Detected Concentration (mg/kg DW)	SQS/LAET (mg/kg DW)
Acenaphthene	1.3	0.5
Anthracene	2.8	0.96
Benzo(a)anthracene	1.6	1.3
Fluoranthene	11	1.7
Fluorene	2.7	0.54
Phenanthrene	11	1.5
Pyrene	5.6	2.6
BBP	2.4	0.063

[7] The Agreed Order was signed by the PLP, 8th Avenue Terminals, Inc., in July 2009, after the cutoff date of this Source Control Status Report (Ecology 2009o).

Chemical	Detected Concentration (mg/kg DW)	SQS/LAET (mg/kg DW)
BEHP	1.7	1.3
Dibenzofuran	1.3	0.54

4.3.2 Georgetown Steam Plant (GTSP) and Flume

Current Operations	Museum
Historical Operations	Power plant, cooling water discharge
Address	6700-13th Avenue S, Seattle 98108
Facility/Site ID	2050 (North Boeing Field Georgetown Steam Plant) 63485131 (Georgetown Steam Plant) 1549544 (Georgetown Flume Outfall)
Chemicals of Concern	PCBs, PAHs, tributyl phosphate, cadmium, chromium, petroleum hydrocarbons
Media Affected	Soil, groundwater, stormwater

Source Control Actions

- Work on replacement of the GTSP Flume (also known as the Georgetown Flume) is continuing. Activities performed on the lower 400 feet of the flume are being conducted as part of the LDW Superfund cleanup, specifically the Slip 4 Early Action Area Administrative Settlement Agreement and Order on Consent No. 10-2006-0634 with the EPA. The remainder of the work is proceeding as an Independent Remedial Action under Ecology's MTCA.
- In October 2008, SCL submitted a final GTSP Flume Outfall Work Plan (SCL 2008, Herrera 2008]. The final work sequence reduces the stormwater management requirements by leaving the outfall open throughout most of the flume cleaning process. To prevent tidal inundation, a steel plate is driven through the flume (wooden sections only) into the ground to create a downstream water-tight barrier as the crews work from upstream to downstream, creating isolated work areas. Stormwater within the isolated work area is being routed to a water treatment facility. Stormwater collected downstream of the steel plate flows out to Slip 4 through the open outfall pipe as it did prior to construction. The steel plate is relocated downstream as the work progresses (Herrera 2008). Work was scheduled to begin in March 2009 and be completed in September 2009 (Herrera 2008).
- Because the flume is part of the Georgetown Steam Plant National Historic Landmark, demolition of the flume requires Section 106 consultation under the National Historic Preservation Act (NHPA) of 1966. In November 2008, ENTRIX completed a cultural resources survey for the project, in compliance with Section 106 of the NHPA, The Washington State Environmental Policy Act, and local City of Seattle and King County regulations (ENTRIX 2008).

Additional source control actions associated with this property are described in Section 4.3.5 (North Boeing Field/Georgetown Steam Plant Site).

4.3.3 North Boeing Field (NBF)

Current Operations	Aircraft finishing and testing; aircraft research and development
Historical Operations	Same
Address	7500 East Marginal Way S, Seattle 98108
Facility/Site ID	2050 (North Boeing Field Georgetown Steam Plant) 2117 (North Boeing Field) 2753918 (Boeing North Boeing Field) 2053 (Boeing North Field JP4 Tanks)
Chemicals of Concern	PCBs, PAHs, metals, VOCs, phthalates, petroleum hydrocarbons
Media Affected	Soil, groundwater, stormwater

Source Control Actions

- Ecology is preparing an update to the NBF/GTSP Summary of Existing Information and Identification of Data Gaps Report (SAIC 2007c) as part of the RI at the NBF-GTSP Site (see below). This report, to be finalized in August 2009, will provide maps and data tables summarizing recent activities at NBF.

Additional source control actions associated with this property are described in Section 4.3.5 (North Boeing Field/Georgetown Steam Plant Site).

4.3.4 King County International Airport

Current Operations	General aviation airport and related activities
Historical Operations	Military airport operations; general aviation
Address	7277 Perimeter Road S (main terminal); various tenant addresses
Facility/Site ID	2051 (King County Int Airport Maint Shop)
Chemicals of Concern	PAHs, phthalates, copper, zinc, petroleum hydrocarbons, PCBs
Media Affected	Stormwater, groundwater

Source Control Actions

- King County cleaned catch basins at KCIA during 2008. Due to the large number of catch basins, the cleanout was divided into west, east, and central KCIA (Dumaliang 2009b). The east side (which included approximately 105 catch basins) was cleaned in September 2008. The west side (which included 62 catch basins and 3 oil/water separators) was cleaned in November 2008 (Dumaliang 2009b). Catch basins in the central portion will be cleaned in 2009 (Dumaliang 2009c).

- King County plans to conduct additional source tracing activities during Summer/Fall 2009 (Dumaliang 2009c).

4.3.5 North Boeing Field/Georgetown Steam Plant (NBF-GTSP) Site

An Agreed Order (No. DE-5685) for the NBF-GTSP Site was signed by the PLPs (Boeing, City of Seattle, King County) and Ecology, effective August 14, 2008 (Ecology 2008b). Under the terms of the Order, Ecology will complete an RI/FS and conduct one or more interim actions, if appropriate, at the NBF-GTSP Site. The PLPs will be given first opportunity to perform any interim actions that may be required under the Agreed Order. The PLPs will pay remedial action costs for Ecology-conducted remedial actions at the site.

Source Control Actions

- In conjunction with the Flume Replacement Project, Boeing has re-routed one of the NBF storm drain lines to remove a single catch basin connection to the flume, and has installed new storm drains to control stormwater sheet flow to the flume. This work was completed during summer of 2008 (Parsons 2009).
- Ecology held a public meeting on September 18 at the South Seattle Community College. The PLPs were invited to participate by providing information on past and ongoing work during the Open House portion of the public meeting. The public comment period for this site ended on September 26, 2008.
- In September 2008, Exponent submitted a Sampling and Analysis Plan (SAP) for an investigation of PCB sources to Slip 4 using chemical fingerprinting (Exponent 2008). Samples were collected by Landau Associates in late September 2008 from five general locations: GTSP, Willow Street and Ellis Street Substations, NBF, and Slip 4. Samples included soil, marine sediment catch basin and flume solids, ash and debris, and concrete joint material (Landau 2008a).

  At the GTSP, 53 soil borings were advanced in the GTSP yard, including the former low lying area and the southern portion of the property. Sixty-one soil samples (plus three duplicate samples) were collected. PCBs were detected in nine samples, with concentrations ranging from 0.037 to 6.2 mg/kg DW. Eighteen samples were collected in the GTSP building, including eight wipe samples and four ash/solids samples from furnace breeches (area where joined furnace vents meet). PCBs were detected in 10 of the 12 breech samples, with total PCB concentrations ranging from 0.0012 mg/kg DW to 1.6 mg/kg DW. Five solids samples were collected from the condenser pit and discharge tunnel; PCBs were detected in all of the samples. The total PCB concentrations in the condenser pit samples were 1.36 and 1.7 mg/kg DW; total PCBs in the discharge tunnel samples were 23.4, 24, and 28 mg/kg DW. One liquid sample was collected from the condenser, taken by opening the condenser and sampling the oil inside. Two samples were collected from the GTSP flume where it daylights at the end of the GTSP discharge tunnel on NBF property (NBF08-FLUME1 and NBF08-FLUME2). The total PCB concentrations in these samples were 4.1 and 9.5 mg/kg DW (Landau 2008a).

Six soil samples (and one duplicate sample) were collected from five soil borings at NBF southwest of the GTSP. PCBs were detected in all but one of the soil borings. Total PCB concentrations in the samples collected from the borings near the property line ranged from 0.43 to 880 mg/kg DW. The total PCB concentrations in soil borings SB08-22 and SB08-36 were 4.6 and 270 mg/kg DW, respectively (Landau 2008a). Concentrations of Aroclor 1254 and total PCBs exceeded MTCA cleanup levels. Fifteen soil samples (and one duplicate sample) were collected from 15 soil borings (SD08-01 to SD08-15) adjacent to a new storm drain line, which runs perpendicular to the western side of Building 3-380, then jogs north and runs approximately parallel to the GTSP flume. PCBs were not detected in any of the soil samples collected along the new storm drain line (Landau 2008a).

Selected samples were to be analyzed for the full suite of 209 PCB congeners (Exponent 2008). The remaining samples were to be frozen. In addition, two solids samples from the catch basins were sent to the University of Maryland for solids particle characterization. Results were not available at the time this Status Report was prepared.

- In late 2008, Boeing repaired a section of storm drain line in the Apron A/B flight line areas (Central NBF Area). This section drains to the north central lateral storm drain line. Re-lining of this section of storm drain pipe was conducted after a video inspection revealed the presence of a degraded corrugated metal pipe that was rusting through (Bach 2008). Samples of soil removed from this area during the storm drain line repair contained 2.2 to 7.5 mg/kg DW PCBs.
- In November 2008, Landau Associates (for Boeing) conducted soil and catch basin sampling along the new storm line installation near the GTSP Flume, and from two locations east of Building 3-333 where storm line excavation activities had recently occurred. Samples were collected from 16 soil borings and eight catch basins. PCBs were detected in 10 of the soil boring samples from eight different locations along the new storm line. Total PCB concentrations ranged from 0.037 to 0.6 mg/kg DW. In catch basins, PCBs were detected in all samples, with concentrations ranging from 0.044 to 2.2 mg/kg DW (Landau 2008b).
- On December 30, 2008, Landau Associates (for Boeing) collected solids samples from eight catch basins, four manholes, and one oil/water separator in the portion of the storm drain system that is downstream of sediment trap T5 and upstream of sediment trap T1 (the north lateral storm drain line). This area had shown higher PCB concentrations during the December 2008 sediment trap sampling event. PCBs were detected in all 13 samples, with total PCB concentrations ranging from 0.041 to 4.6 mg/kg DW (Landau 2009).
- SAIC is preparing a Supplemental Data Gaps Report for the NBF-GTSP Site; this document will update information presented in the February 2007 report (*North Boeing Field and Georgetown Steam Plant Summary of Existing Information and Identification of Data Gaps* (SAIC 2007c)), including review of 247 documents that were unavailable at the time the 2007 report was prepared and 132 documents published after completion of the 2007 report. A draft Supplemental Data Gaps Report was submitted to Ecology in

April 2009; review comments are currently being incorporated, and a final report is scheduled to be published in August 2009.

- SAIC began preparation of a SAP to conduct preliminary stormwater and filtered suspended solids sampling at two locations at NBF. One sampling station will be located near the downstream end of the north lateral storm drain line; the other will be located on the downstream side of the King County Lift Station. The SAP will be completed in July 2009, with sampling anticipated to begin in August 2009.

Table 6. Source Control Action Items – Early Action Area 3 (Slip 4)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Notes and Follow-On Actions
North Boeing Field / KCIA / I-5 Storm Drains	Distribute 2005/2006 in-line sediment trap data for wet winter season.	High	SCAP	SPU	Complete	--	2006	Continue monitoring of sediment trap data.
	Reinstall sediment traps and continue monitoring as needed.	High	SCAP	SPU, Boeing	Ongoing	2014		Reinstall sediment traps every 6 months until 2014.
	Conduct comprehensive analysis of sediment trap and catch basin data.	High	SCAP	Ecology	Complete	--	February 2007	
I-5 / Residential Drainage	Complete source tracing.	High	SCAP	SPU	Complete	--	2006	Continue monitoring of sediment trap data.
	Clean out catch basins and lines.	Medium	SCAP	Ecology, SPU, WSDOT	Canceled	--	NA	Contaminant levels remain very low; no action deemed necessary.
Georgetown Flume	Investigate connection toward North Boeing Field as a possible source of PCBs.	High	SCAP	SPU, Boeing	Complete	--	August 2006	
	Close connections, remove contaminated sediment, and demolish and/or replace the flume.	High	SCAP	SCL, SPU	In Progress	Fall 2009		Removal of flume to be completed during Summer 2009.
Crowley Marine / Alaska Logistics	Conduct physical site inspection confirming outfalls and what they drain(ed).	Medium	SCAP	Ecology, SPU	Complete	2006	2006	
	Compile and evaluate historical groundwater quality data; complete historical use investigation to identify data gaps for recontamination potential (soil and groundwater).	Low	SCAP	Ecology	Complete	--	October 2006	Determine means to fill data gaps.
	Determine means to fill data gaps.	Low	SCAP	Ecology	Complete	--	October 2006	Negotiate an Agreed Order; conduct groundwater investigation to fill data gaps.
	Negotiate an Agreed Order for investigation and cleanup of this site.	Medium	Follow-On	Ecology, PLP	Complete	--	July 2009	
	Conduct investigation and cleanup activities in accordance with the Agreed Order, including collection of groundwater and storm drain system samples as appropriate.	Medium	SCAP	8th Avenue Terminals (Crowley)	Planned	2011/2012		
	Collect stormwater runoff and in-line solids to assess recontamination potential from current operations.	Medium	SCAP	Ecology, SPU, Crowley	Complete	--	July 2008	Catch basin samples collected at Alaska Logistics by SPU in July 2008; additional sampling to be conducted under Agreed Order.
	Clean catch basins and drain lines.	Medium	SCAP	Crowley	Planned	Fall 2009		UPRR to clean catch basins; Alaska Logistics in compliance as of August 2008.
	Conduct a Site Hazard Assessment (SHA).	Medium	New	Ecology	Complete	--	February 2008	

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Notes and Follow-On Actions
	Review CERCLA 104(e) responses submitted by Crowley Marine Services, Inc. and Samson Tug & Barge Company, Inc.	Medium	New	Ecology, EPA	Planned	December 2009		
First South Properties / Emerald Services	Collect stormwater runoff and in-line solids to assess recontamination potential from any ongoing operations.	Medium	SCAP	Ecology, SPU	Complete	--	November 2006	
	Investigate two 4- to 6-inch outfalls located on the bank of First South Properties. Determine if the outfalls are still functioning and their drainage areas.	Medium	SCAP	Ecology, SPU	Complete	--	2006	
	Clean catch basins and drain lines.	Medium	SCAP	Emerald Services	Complete	--	2006	
	Reassess drainage swale for erosion and recontamination potential for phthalates.	Medium	SCAP	Ecology	Complete	--	2006	
	Compile and evaluate historical groundwater quality data; complete historical use investigation to identify data gaps for recontamination potential (soil and groundwater).	Low	SCAP	Ecology	Complete	--	October 2006	
	Determine means to fill data gaps.	Low	SCAP	Ecology	Canceled	NA		Not Required
	Conduct sampling if necessary.	Low	SCAP	Ecology	Canceled	NA		Not Required
	Re-inspect facility and collect in-line solids to assess recontamination potential from any ongoing operations.	Medium	New	Ecology, SPU	Planned	August 2009		Extensive changes to property drainage and operations since last inspection.
	Review CERCLA 104(e) responses submitted by First South Properties and Evergreen Marine Leasing.	Medium	New	Ecology, EPA	Planned	December 2009		Completion date depends on addressee response time and EPA processing time.
Boeing Plant 2	Inspect Bldg. 2-122 area.	Medium	SCAP	Ecology	Complete	--	April 2007	Re-inspect as needed to ensure compliance with permit.
	Sample onsite storm drain solids.	Medium	SCAP	Ecology	Complete	--	May 2007	
	Assess existing groundwater data in the area.	Low	SCAP	Ecology, EPA	Planned	2009		EPA lead
GTSP	Remove PCB-contaminated soils; implement erosion or other source control as needed.	High	SCAP	SCL	Complete	--	May 2006	Conduct site-wide site characterization.
	Conduct site-wide site characterization to assess need for additional remediation.	High	SCAP	SCL	Planned	2010		To be done as part of Agreed Order No. DE-5685 (see NBF-GTSP below).
North Boeing Field	Remove last 1,400 linear feet of PCB joint sealant.	High	SCAP	Boeing	Complete	--	2006	Characterize extent of PCBs in new joint sealant.
	Characterize extent of PCBs in new joint sealant material.	High	Follow-On	Boeing	In Progress	2010		To be done as part of Agreed Order No. DE-5685 (see NBF-GTSP below).
	Complete source evaluation at north drain line and complete clean-out.	High	SCAP	Boeing	Complete	--	November 2006	Continue source tracing in north drain line.

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Notes and Follow-On Actions
	Continue source tracing in north drain line to identify and/or eliminate transport of PCBs to Slip 4.	High	Follow-On	Boeing	In Progress	2010		To be done as part of Agreed Order No. DE-5685 (see NBF-GTSP below).
	Slip-line and/or replace sections of the north storm drain line to reduce the potential for PCB transport to Slip 4.	High	New	Boeing	Complete	--	March 2008	
	Characterize the extent of PCBs in soil adjacent to the north drain line.	High	New	Boeing	Complete	--	November 2007	
	Clean Oil/Water Separator 640 and catch basins.	High	SCAP	Boeing	Complete	--	August 2006	
	Clean out catch basins.	High	SCAP	Boeing	Complete	NA		Continue source tracing in north drain line.
	Review results of Ecology's TCP, Waste and Water programs, and King County/Hazardous Waste Inspections of NBF (Nov -Dec 2005).	Medium	SCAP	Ecology, EPA	Complete	--	February 2007	
	Revise Stormwater Pollution Prevention Plan; conduct additional inspections of the NBF facility as necessary.	Medium	SCAP	Ecology, Boeing	Planned	Fall 2009		
KCIA	Sample eight oil/water separators.	High	SCAP	KCIA	Complete	--	October 2006	Continue source tracing at KCIA.
	Test for PCB joint sealant (~1acre); remove as necessary.	High	SCAP	KCIA	Complete	--	October 2006	
	Complete source tracing.	High	SCAP	KCIA	In Progress	December 2009		
	Clean out catch basins and lines (if required).	High	SCAP	KCIA	In Progress	December 2009		105 catch basins on east side cleaned 9/2008; 62 additional catch basins and 3 oil/water separators cleaned November 2008. Remaining central catch basins to be cleaned before end of 2009.
	Re-inspect KC Surplus Storage, NE T-Hangars, and Shultz Distributing, Inc. as necessary to achieve compliance with BMPs.	Medium	SCAP	SPU, Ecology	Complete	--	July 2007	Conduct periodic re-inspections as needed.
	Conduct follow-up inspections at Shultz Distributing, Inc. until compliance is achieved. Evaluate potential contaminants of concern and pathways.	Low	SCAP	SPU, Ecology	Complete	--	July 2007	Conduct periodic re-inspections as needed.
	Continue business source control inspections and re-inspections as needed to verify that facilities comply with applicable regulations and BMPs.	High	Follow-On	SPU, Ecology	Ongoing	December 2009		Ecology and SPU inspectors are coordinating to re-inspect all facilities identified in the SCAP before the end of 2009.
NBF-GTSP	Negotiate an Agreed Order for investigation and cleanup of this site.	High	New	Ecology, King County, City of Seattle, Boeing	Complete	--	August 2008	Agreed Order No. DE-5685

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Notes and Follow-On Actions
	Update NBF/GTSP *Summary of Existing Information and Identification of Data Gaps* Report to incorporate recent activities and data.	Medium	New	Ecology	In Progress	August 2009		To be done as part of Agreed Order No. DE-5685.
	Conduct RI/FS and implement interim actions (as needed).	High	New	Ecology, Boeing, City of Seattle, King County	In Progress	2012		To be conducted in accordance with Agreed Order No. DE-5685.
Upland Properties	Review data for contaminants of concern or pathways to Slip 4 for upland properties.	Low	SCAP	Ecology, SAIC	Complete	--	December 2006	
Adjacent and Upland Properties	Review municipal and industrial NPDES permits for COCs found in sediments.	Low	SCAP	Ecology, EPA	Complete	--	December 2008	NPDES permits do not track sediment COCs.

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the EAA-3 SCAP
Follow-On	Action item is a follow-on to an action item identified in the EAA-3 SCAP
New	Action item identified after publication of the EAA-3 SCAP

4.4 Early Action Area 4 (Boeing Plant 2/Jorgensen Forge)

EAA-4 and relevant adjacent and upland properties are shown in Figure 10. Action items for this source control area are listed in Table 7.

Location	RM 2.8-3.7 East
Chemicals of Concern	PCBs, phthalates, PAHs, metals
Data Gaps Evaluation	June 2007 (E&E 2007a)
SCAP	December 2007 (Ecology 2007f)

No area-wide source control actions were completed during the September 2008 through June 2009 reporting period.

4.4.1 Boeing Plant 2

Current Operations	Airplane parts manufacturing
Historical Operations	Same
Address	7755 East Marginal Way S, Seattle 98108
Facility/Site ID	2100 (Boeing Plant 2)
Chemicals of Concern	VOCs, PCBs, PAHs, metals, petroleum hydrocarbons
Media Affected	Groundwater, stormwater, soil, air, sediment

Boeing is conducting RCRA Corrective Actions at Boeing Plant 2 under an Administrative Order on Consent issued to Boeing in 1994 by EPA. Corrective actions consist of the following major elements (Geomatrix 2008):

- RCRA Facility Investigation, Corrective Measures Study, Interim Measures, and Corrective Measure Implementation at the Upland area of Boeing Plant 2. This work is inland from the top of the bank and includes cleanup of soil areas, groundwater plumes, and control of stormwater discharge.
- RCRA Facility Investigation, Corrective Measures Study, and Interim Measures for the Duwamish Sediment Other Area (DSOA), the Southwest Bank, the 2-40s Under-building area, and any RCRA units that exist within the DSOA boundary or on the bank side of the top of the bank.

Source Control Actions

- In October 2008, Golder Associates (for Boeing) prepared the *Phase 2 Report and Work Plan, Characterization of Caulk in Concrete Pavements at Boeing Plant 2* (Golder 2008). This report describes the caulk mapping, sampling, analysis, and review of data conducted to characterize the joint caulk material in outdoor concrete pavement at Plant 2. It also provides recommendations for removing or stabilizing caulk materials according to their respective PCB concentrations. Detailed mapping of caulk materials in

the 2-10, 2-40s, and 2-60s areas was conducted; a total of 107 caulk samples were collected. PCB concentration ranges were identified for each of 21 caulk categories. Storm drain solids concentrations were compared to the caulk data; no definitive association was evident (Golder 2008).

- A Phase 3 Work Plan that includes removal or stabilization of caulk materials containing more than 25 ppm PCBs in the 2-10 and 2-60s areas of Plant will be prepared following EPA approval of the Phase 2 report (Golder 2008).

4.4.2 Jorgensen Forge

Current Operations	Manufacture of steel forgings and rolled aluminum rings; processing of nickel, titanium, and specialized alloys
Historical Operations	Manufacture of structural steel, tractors, and road equipment; prefabricated steel cutting and distribution
Address	8531 East Marginal Way S, Seattle 98108
Facility/Site ID	2382 (Jorgensen Forge Corp) 36575469 (Jorgensen Forge Area 3 Gasoline)
Chemicals of Concern	Metals, PCBs, petroleum hydrocarbons, non-halogenated solvents
Media Affected	Soil, groundwater

Ecology and Jorgensen Forge Corporation negotiated an Agreed Order (No. DE 4127, effective July 12, 2007). The order requires Jorgensen Forge to evaluate existing data, identify potential ongoing sources of contaminants to sediment, and conduct additional investigations to fill identified data gaps, if necessary (Ecology 2007c).

Source Control Actions

- Jorgensen Forge completed well drilling necessary for the data gaps investigation required by the Agreed Order; the wells will be sampled for four quarters (Ecology 2009h). Soil samples were collected; results were not available at the time this Status Report was prepared. A draft Source Control Addendum Report, which will present results of the current investigation, is due in February 2010 (Ecology 2009h).
- Ecology's WQ Program issued a Notice of Violation (NOV #6180) on November 13, 2008, to King County and the City of Tukwila due to PCB contamination in the 24-inch storm drain line located between the Boeing Plant 2 and Jorgensen Forge properties (Ecology 2008f), referred to as the Jorgensen Pipe. Sediments in the pipe contain up to 10,000 mg/kg PCBs.
- In response to the NOV, the City of Tukwila hired PBS Environmental & Engineering in late 2008 to conduct a source control investigation of the City of Tukwila stormwater system in the vicinity of the 24-inch Jorgensen Pipe (PBS Engineering & Environmental). In 1996, the city installed a stormwater collection system along East Marginal Way S to address flooding problems in the street. A total of 48 catch basins were installed along both sides of East Marginal Way S to drain this area (25 on the east side and 23 on the west side). The system discharges into an existing stormwater line

under East Marginal Way S, which then discharges to the Jorgensen Pipe (PBS Engineering & Environmental).

PBS Environmental collected grab water and solids samples in six representative catch basins within the city-owned stormwater system in October 2008. Samples were also collected from a manhole at the east end of the Jorgensen Pipe. A total of seven solids samples and five water samples were collected. PCB concentrations in solids samples collected from the Tukwila catch basins ranged from non-detect (<0.2 mg/kg DW) to 0.91 mg/kg DW. Water samples from these catch basins were all non-detect (<0.1 µg/L). A solids sample collected in the manhole at the east end of the Jorgensen Pipe (just west of East Marginal Way S) contained 100 mg/kg DW PCBs. The water sample collected at this location contained 22 µg/L PCBs (PBS Engineering & Environmental).

The Jorgensen pipe is approximately 1,200 feet long from the manhole at the west end of East Marginal Way S to the LDW outfall at approximately RM 3.6. The slope of the pipe is less than 1 percent, and mean higher high water is 1.2 feet higher than the manhole at East Marginal Way S. Therefore, tidal influence extends the full length of the pipe and beyond, and water levels in the pipe rise and fall with the tides (PBS Engineering & Environmental). Based on these results, PBS Environmental concluded that it is unlikely that the City of Tukwila stormwater system is an ongoing source of PCB contamination to the Jorgensen Pipe. Furthermore, they concluded that due to the low pipe elevation gradient, insufficient stormwater flow to scour sediments out of the pipe, and the effects of tidal flushing, PCB-contaminated solids remain in the Jorgensen Pipe and are likely attributable to historical contamination (PBS Engineering & Environmental).

4.4.3 King County International Airport

Current Operations	General aviation airport and related activities
Historical Operations	Military airport operations; general aviation
Address	7277 Perimeter Road S (main terminal); various tenant addresses
Facility/Site ID	NA
Chemicals of Concern	PAHs, phthalates, copper, zinc, petroleum hydrocarbons, PCBs
Media Affected	Stormwater, groundwater

Source Control Actions

- In September 2008, SPU installed an in-line sediment trap at the KCIA discharge point manhole that is connected to the City of Tukwila East Marginal Way S storm drain system.
- King County cleaned catch basins at KCIA during 2008, as described in Section 4.3.4. A catch basin solids sample was collected from this storm drain basin on November 13, 2008. PAHs and phthalates were present in this sample at concentrations above their corresponding SQS and CSL values; PCBs were not detected (< 0.027 mg/kg DW). Some semivolatile analytes, including phenolic compounds, had elevated detection limits (10

mg/kg) (Dumaliang 2009c). Sample results for detected analytes with concentrations above the SQS are listed below[8]:

Chemical	Concentration (mg/kg DW)	Concentration (mg/kg OC)	SQS (mg/kg OC)	CSL (mg/kg OC)
BBP	2.0 J	100	4.9	64
BEHP	3.2 JB	160	47	78
Acenaphthene	4.9 J	245	16	57
Anthracene	26	1,300	220	1,200
Benzo(a)anthracene	190	9,500	110	270
Benzo(a)pyrene	120	6,000	99	210
Benzo(b)fluoranthene	190	9,500	230	450
Benzo(k)fluoranthene	96	4,800	230	450
Chrysene	210	10,500	110	460
Dibenz(a,h)anthracene	14	700	12	33
Fluroanthene	470	23,500	160	1,200
Fluorene	7.6 J	380	23	79
Indeno(1,2,3-cd)pyrene	130	6,500	34	88
Phenanthrene	120	6,000	100	480
Pyrene	370	18,500	1,000	1,400
Carbazole	35	1,750	NA	NA
Dibenzofuran	5.3 J	265	15	58

- KCIA's Airport Engineering Section prepared a *Source Control Report for KCIA Drainage Basin #5*, dated January 7, 2009 (KCIA 2009). Drainage Basin #5 consists of 10.5 acres located at the west side of the Airport. Stormwater is collected by catch basins and channel drains and is directed in a southerly direction through a system of pipes and manholes. Stormwater leaves KCIA property at manhole MH-1-E, at the southwest corner of the basin, where it discharges to the City of Tukwila storm drain system at East Marginal Way S. Stormwater from the northern portion of the Basin #5 area is discharged to the sanitary sewer. The Source Control Report includes a discussion of PCB data, describes KCIA operations and maintenance, and summarizes source control activities.
- SPU collected a sample on March 26, 2009, from the sediment trap installed in September 2008 (see above). Aroclor 1254 was detected at 11.0 mg/kg DW (Appendix E, Table 2). No other Aroclors were detected. An in-line sample collected from this storm drain at the same time also contained PCBs (Aroclor 1254 at 8.0 mg/kg DW), as well as PAHs (phenanthrene, benzo[a]anthracene, chrysene, dibenzo[a,h]anthracene, fluoranthene, indeno[1,2,3-cd]pyrene, and pyrene) and phthalates (BBP) above the storm drain screening values (Appendix E, Table 4).

[8] It should be emphasized that the SQS and CSL values do not apply to storm drain solids. It is important to note that any comparison of this kind is most likely conservative given that sediments discharged from storm drains are highly dispersed in the receiving environment and mixed with the natural sedimentation taking place in the system.

Table 7. Source Control Action Items – Early Action Area 4 (Boeing Plant 2/Jorgensen Forge)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Boeing Plant 2	Evaluate the remaining Corrective Measures Study (CMS) study areas and continue to determine needed source control actions.	Medium	SCAP	EPA, Boeing	In Progress	TBD		
	Continue to delineate and evaluate the EMF plume.	Medium	SCAP	EPA, Boeing	In Progress	TBD		
	Complete design and implementation of dredging, capping, and/or backfilling of the Duwamish Sediment Other Area (DSOA) Interim Measure.	High	SCAP	EPA, Ecology, Boeing	In Progress	TBD		
	Remove contaminated bank fill material.	High	SCAP	EPA, Boeing	Planned	TBD		
	Conduct monthly sampling, including groundwater sampling and vapor sampling of the DDC wells and multiple points along the vapor treatment system.	Medium	SCAP	EPA, Boeing	In Progress	TBD		
	Continue quarterly shoreline groundwater monitoring.	High	SCAP	EPA, Boeing	In Progress	TBD		
	Re-evaluate the SWPPP and make necessary changes if process/operational changes are made at Plant 2.	Low	SCAP	Ecology, Boeing	Ongoing	TBD		
	Excavate PCB-contaminated soil in the substation area (southwest corner of Plant 2).	High	New	Boeing, Jorgensen	Planned	TBD		
	Address removal of materials containing PCBs, including joint caulk material.	High	SCAP	EPA, Boeing	In Progress	2009/2010		Characterization of caulk in concrete pavement completed in October 2008; Work Plan for caulk removal/stabilization to be prepared following EPA approval of characterization report.
	Conduct a joint hydrologic investigation with Jorgensen Forge to provide additional hydrogeologic data at the boundary of the two facilities.	High	SCAP	Boeing, Jorgensen	Planned	TBD		
	Collect in-line sediment samples in the City of Seattle and City of Tukwila systems immediately prior to discharge to Plant 2's storm drain system.	High	SCAP	EPA, Boeing	Planned	TBD		
	Conduct stormwater source control sampling of suspended solids and/or water along active storm drain lines.	High	New	Boeing	In Progress	TBD		
	Implement catch basin solids sampling program.	High	New	Boeing	In Progress	TBD		
	Determine if the city storm drain outfall discharging to EAA-4 at the South Park Bridge is Outfall J or another outfall.	Medium	SCAP	EPA, City of Seattle	Complete	2008	August 2008	Completed during reconnaissance for sediment trap installation.

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Jorgensen Forge	Conduct a joint hydrologic investigation with Boeing to provide additional hydrogeologic data at the boundary of the two facilities.	Medium	SCAP	Boeing, Jorgensen	Planned	TBD		
	Conduct a source control investigation through Ecology Agreed Order No. DE-4127 to determine if the facility is an ongoing source of contamination to LDW sediments.	High	SCAP	Jorgensen, Ecology	In Progress	2009		
	Conduct soil and groundwater sampling in the southeast portion of the site (historically thought to have been occupied by a wood treating facility) to determine if arsenic contamination is present and if so, whether the contamination is leaching into the adjacent sediments.	High	SCAP	Ecology, Jorgensen	Planned	2009		To be completed under Agreed Order No. DE-4127 (see above).
	Review current groundwater monitoring data to ensure that groundwater is not a pathway for contaminants to the LDW.	High	SCAP	Ecology, Jorgensen	Planned	2009		To be completed under Agreed Order No. DE-4127.
	Conduct groundwater sampling in the center of the property (previously occupied by Isaacson Iron Works) to determine if contaminants are present above screening levels.	High	SCAP	Ecology, Jorgensen	Planned	2009		To be completed under Agreed Order No. DE-4127.
	Determine ownership of the 12- and 24-inch diameter storm drain lines located in an easement along the Jorgensen/Boeing property line; determine the exact locations of the connections between these lines and the stormwater systems of Jorgensen, Boeing, City of Tukwila, and KCIA.	High	SCAP	Ecology, Jorgensen Forge, Boeing, City of Tukwila, KCIA	Complete	--	November 2008	Boeing has agreed to take responsibility for the 12-inch line. Ecology issued NOV to King County and City of Tukwila for PCBs in 24-inch line.
	Remove PCB-contaminated sediments from the 24-inch storm drain line.	High	Follow-On	King County, City of Tukwila	Planned	TBD		To be completed in response to NOV.
	Assess the quality of discharged water and process through which water is discharged from the vacuum degasser pit, railroad scale sumps, argon-oxygen-decarbonization, and scale sumps.	Low	SCAP	EPA, Jorgensen	Planned	TBD		
	Continue to address PCB and metal contamination in sediments of the LDW and Shoreline Bank Area through EPA CERCLA Order No. 10-2003-0001.	High	SCAP	EPA, Jorgensen	Planned	TBD		
	Develop a hydrogeologic site model as part of the source control investigation to characterize the groundwater system on site, including tidal influence.	High	SCAP	Jorgensen, Boeing	In Progress	TBD		
	Negotiate an Amended Administrative Order on Consent (AOC) for preparation of an EE/CA for cleanup of affected sediments along a portion of the LDW adjacent to this property.	High	New	EPA, Jorgensen	In Progress	TBD		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
KCIA	Determine the connections between the KCIA stormwater system, the City of Tukwila system, and the 24-inch stormwater pipeline along the Jorgensen/Boeing property line.	High	SCAP	Ecology, KCIA, Jorgensen, Boeing, City of Tukwila	Complete	--	2008	KCIA and City of Tukwila currently discharge to the 24-inch stormwater pipe (Ecology 2008f).
	Determine whether additional sampling of PCBs in the KCIA stormwater system and joint caulk material is necessary, based on review of PCB sampling results for KCIA Lot 12.	Medium	SCAP	Ecology	Planned	TBD		
	Test, and as needed, remove any material that contains elevated levels of PCBs in this portion of KCIA (including caulk containing PCBs).	Medium	SCAP	Ecology, KCIA	Planned	TBD		
	Review the SWPPP and make necessary changes to prevent contaminants from entering the KCIA stormwater system.	Low	SCAP	Ecology, KCIA	Planned	TBD		
East Marginal Way S.	Determine location and connection of large pipe crossing the northern edge of the Jorgensen property.	High	SCAP	City of Tukwila, Jorgensen, KCIA	Complete	--	2008	KCIA and City of Tukwila currently discharge to the 24-inch stormwater pipe (Ecology 2008f).
	Determine connections between the KCIA stormwater system and the City of Tukwila system.	High	SCAP	City of Tukwila, KCIA	Complete	--	2008	KCIA and City of Tukwila currently discharge to the 24-inch stormwater pipe (Ecology 2008f).

Priority:

High = High priority action item -- to be completed prior to sediment cleanup
Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
Completed action item

Type:

SCAP	Action item identified in the EAA-4 SCAP
Follow-On	Action item is a follow-on to an action item identified in the EAA-4 SCAP
New	Action item identified after publication of the EAA-4 SCAP

4.5 Early Action Area 5 (Terminal 117)

EAA-5 and relevant adjacent and upland properties are shown in Figure 11. Action items for this source control area are listed in Table 8.

Location	RM 3.4-3.8 West
Chemicals of Concern	PCBs, PAHs, phenol, phthalates
Data Gaps Evaluations	Terminal 117: September 2003 (Windward 2003c) South Park Marina: June 2007 (SAIC 2007g)
SCAP	July 2005 (Ecology 2005)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Source Control Actions

- SPU inspected 10 businesses in the South Park subbasin between September 2008 and June 2009; all but two are currently in compliance with applicable codes and regulations. Businesses inspected by SPU during the current reporting period are listed in Appendix B; inspection locations are shown in Figure 3.

4.5.1 Terminal 117 and Adjacent Streets

Current Operations	Port of Seattle operations (International Inspection, Construction Services)
Historical Operations	Asphalt manufacturing; untreated lumber storage
Address	8700 Dallas Avenue S, Seattle
Facility/Site ID	37657495 (Malarkey Asphalt Company)
Chemicals of Concern	PCBs
Media Affected	Soil, groundwater, sediment

A Revised Engineering Evaluation/Cost Analysis (EE/CA) is currently being conducted for the Terminal 117 EAA-5 by the Port of Seattle and the City of Seattle (Windward 2008b).

Source Control Actions

- The Port of Seattle installed six new groundwater monitoring wells; these and five existing wells were sampled quarterly (four times) throughout 2008 and 2009. Soil samples from five well locations contained 0.44 to 4.2 mg/kg PCBs and 13 to 45,000 mg/kg TPH. In groundwater samples, PCBs and chrysene were detected above screening values. A final *Fourth Quarter 2008 Interim Groundwater Monitoring Data Results Report* was submitted to EPA on April 9, 2009, which contains groundwater results from 2003 to date (AECOM 2009).
- The following quarterly groundwater monitoring sampling events took place or are planned:

  - Third quarter 2008: September 10-12, after installation of monitoring well MW-11 on September 2 (Windward 2008e, ENSR/AECOM 2008)
  - Fourth quarter 2008: December 9-11 (AECOM 2009)
  - First quarter 2009: March 30-April 1 and April 8 (Port of Seattle and AECOM 2009)
  - Second quarter 2009: Scheduled for May 26 to coincide with Ecology's work at Basin Oil (Port of Seattle and AECOM 2009)

- The Port of Seattle and City of Seattle submitted a draft Revised EE/CA Report to EPA on July 30, 2008 (Windward 2008c). The Port and City requested an extension to the draft final EE/CA (to January 2009) to allow for the incorporation of dioxin/furan investigation and evaluation efforts (Windward 2009a).
- An archived subsurface soil sample from the T-117 Upland Area was analyzed for dioxins and PCBs on December 5, 2008. Aroclor 1260 was the only detected Aroclor, at a concentration of 7.4 mg/kg DW; the calculated TCDD toxic equivalency concentration (TEQ) was 3.41 ng/kg DW (Windward 2009a).
- On May 13, 2009, the Port of Seattle submitted a memo to EPA and Ecology recommending modifications to the groundwater monitoring program at T-117 (Port of Seattle and AECOM 2009). The memo indicates that the majority of monitoring wells have been sampled and analyzed for at least five quarters, although some have had insufficient water to allow sample collection or were recently installed. Analysis of the sampling results concluded that arsenic and silver are detected above screening levels. Arsenic is detected at low levels, is ubiquitous in groundwater, and may be associated with background concentrations. Silver has been detected in four shoreline wells and its source is unclear. TPH and/or PCBs have been detected in at least one of the groundwater samples, above screening levels. The memo recommended eliminating benzene, toluene, ethylbenzene, and xylenes (BTEX) from future groundwater sampling due to lack of detections. Although VOCs have only been detected at levels below screening values, two wells were recommended for continuing quarterly VOC sampling (MW-01 and MW-11). SVOCs detected above screening levels included BEHP and carcinogenic PAHs, and were proposed for continuing analysis at a subset of the monitoring wells. The memo recommended no further groundwater analysis be done for dioxins/furans; during the fourth quarter 2008 sampling event, only 1,2,3,4,6,7,8,9-octachloro dibenzo-p-dioxin was detected (MW-08R) and total values were below screening levels (Port of Seattle and AECOM 2009).

Dioxin Investigation/PCB Boundary Refinement

- The City of Seattle mailed a letter reporting preliminary dioxin sampling results in yards on September 11, 2008, to each of the owners and residents whose yards were sampled for dioxins. The city followed up with telephone calls on October 8 and 9 to report final dioxin results to each of the owners and residents (Windward 2008e). In coordination with EPA and the Health Department, the City of Seattle and Port of Seattle mailed letters to each of the owners and residents whose yards were sampled to report the final,

validated dioxin and PCB sampling results, in addition to the results from the upland portion of the EAA (Windward 2009a).

- During October 2008, PCB analyses conducted on samples collected in yards along S Cloverdale Street showed the presence of PCBs, predominantly in the parking strip along the northern road edge (Windward 2009a). The city is working with EPA on next steps to delineate any needed expansion of the current EAA removal boundary to incorporate removal of these PCBs where necessary.
- The Dioxin Technical Workgroup presented a review of the dioxin data and associated forensic data evaluation to the Agencies and Stakeholders on December 15, 2008. The Dioxin Technical Workgroup determined and presented in their December presentation that "the weight-of-evidence based on cumulative evaluations is that T-117 impacts on yard Dioxin/Furan results are negligible-to-small (upper bound), with relatively low uncertainty" (Windward 2009a). An additional data analysis meeting was held on March 24, 2009. The Dioxin Workgroup submitted a draft memo summarizing the findings (Windward 2009d).
- On February 2, 2009, the City of Seattle met with EPA and Ecology to discuss PCB data gaps. A draft Quality Assurance Program Plan (QAPP) addendum was submitted to EPA on March 6, 2009 (Windward 2009b).
- The City of Seattle met with Ecology to discuss Site Contaminants of Concern and Cleanup Standards on February 11, 2009 (Windward 2009b).
- The Adjacent Streets PCB Boundary Refinement QAPP was finalized and approved in April, and the field investigation was conducted from April 20 to April 29, 2009. This sampling employed a multi-increment approach, which is a more sensitive sampling methodology that EPA has determined is the best approach to understanding the overall risk of contamination and to determine where cleanup needs to occur (Windward 2009d). The agencies took split samples from the PCB sampling effort to analyze for dioxin/furan (Windward 2009c). Final, validated results for PCBs were expected in early June and final validated results for dioxin are expected by the end of July (Port of Seattle 2009).
- The final *Dioxin Investigation and PCB Sediment Boundary Delineation Report* was submitted to EPA on May 8, 2009. At a minimum, the Terminal 117 EE/CA will be delayed for public comment by three to six months in order to incorporate the results.

4.5.2 Basin Oil

Current Operations	Container (drum) storage
Historical Operations	Asphalt production; collection, transport, and marketing of used oil
Address	8661 Dallas Avenue S and 8617 17th Avenue S, Seattle 98108
Facility/Site ID	83476734 (Basin Oil Co Dallas Avenue) 8901731 (Basin Oil Drum Storage 17th Avenue S)
Chemicals of Concern	PCBs, petroleum hydrocarbons
Media Affected	Soil, groundwater, stormwater, sediment

Source Control Actions

- Ecology's Hazardous Waste program issued a penalty of $41,000 to Basin Oil on December 4, 2008 (Washington State Environmental Hearings Office 2009b) for failure to:
    - Process customers' used oil waste within 90 days of acceptance,
    - Test wastes to be sure they are not hazardous,
    - Conduct soil testing to verify that soil meets Washington State cleanup standards, and
    - Install a groundwater monitoring well.
- Basin Oil filed an appeal of the penalty with the Pollution Control Hearings Board on December 30, 2008 Washington State Environmental Hearings Office 2009a). Prehearing conferences took place in January, March, and June 2009. Mediation is scheduled for August 31, 2009, and a hearing has been scheduled for February 8–10, 2010 (Washington State Environmental Hearings Office 2009b).
- Because the nature and extent of any contamination remaining on the Basin Oil property had not been fully characterized, Ecology hired a contractor (SAIC) to conduct soil and groundwater sampling at the Basin Oil property to determine if more soil removal is needed and if chlorinated solvents found in the Port of Seattle wells along Dallas Avenue S originate from Basin Oil or from some other source.
- Ecology negotiated an access agreement with Basin Oil, and SAIC collected onsite soil samples on May 12 and 13, 2009. Two monitoring wells were installed and samples were collected on May 26, 2009. The Port of Seattle planned to collect groundwater from its wells on the same day. Draft results were provided to Ecology in late June 2009. Preliminary results indicate low levels of contaminants in soil and groundwater; however, Basin Oil does not appear to represent a potential source of recontamination for EAA-5 sediments.

4.5.3 South Park Marina

Current Operations	Marina operations (moorage, support facilities, boat maintenance and repair)
Historical Operations	Barrel reconditioning and painting; boat building; mobile home park
Address	8604 Dallas Avenue S, Seattle 98108
Facility/Site ID	44653368 (South Park Marina)
Chemicals of Concern	Metals, PAHs, phthalates, PCBs, pesticides, petroleum hydrocarbons, VOCs
Media Affected	Soil, groundwater

Source Control Actions

- Additional sampling and testing of mercury in groundwater at ultra-low detection limits was completed by SAIC in August to determine if there is a groundwater pathway for

mercury to the LDW. The maximum detected concentration of mercury was 0.0017 µg/L (SAIC 2008e).

- SAIC assessed the potential for sediment contamination due to potential releases from this site in a Technical Memorandum dated June 22, 2009 (SAIC 2009f). The assessment concluded that, while surface sediments at South Park Marina exceeded the SMS criteria for total PCBs, South Park Marina may not have been responsible for this contamination, nor are contaminants associated with South Park Marina expected to cause additional future exceedances. Ecology is reviewing the report and will determine whether remedial action is necessary to protect the planned remediation at Terminal 117.

Table 8. Source Control Action Items – Early Action Area 5 (Terminal 117)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Terminal 117	Verify placement of institutional controls and write/adopt restrictive covenants to prevent recontamination, check soil cover/barrier, discuss further assessment of subsurface contamination at Malarky plant.	Medium	SCAP	Port of Seattle, Ecology	Complete	--	September 2007	Amendment to the scope of work requires more extensive removal of contamination. The basis for this has changed and is no longer applicable.
	Conduct a time-critical removal action to remove additional PCB-contaminated soil in the upland portion of Terminal 117.	Medium	New	Port of Seattle	Complete	--	2006	
	Check soil cover/barrier across site for industrial use based on suspected residual subsurface contamination.	Medium	SCAP	Port of Seattle, Ecology	Complete	--	September 2007	Amendment to the scope of work requires more extensive removal of contamination. The basis for this has changed and is no longer applicable.
	Continue discussions between the Port, the City of Seattle, EPA, and Ecology regarding how to further address the potential presence of subsurface contamination in portions of the site formerly occupied by the Malarkey plant.	High	SCAP	Port of Seattle, Ecology, City of Seattle, EPA	Complete	--	September 2008	Conduct soil sampling to determine whether subsurface contamination is present.
	Revise the July 2008 EE/CA to incorporate all relevant upland and right-of-way data, including assessments of portions of the site formerly occupied by the Malarkey plant.	High	New	City of Seattle, Port of Seattle, EPA	In Progress	TBD		
	Conduct soil sampling at former Malarkey plant location to determine whether contamination is present in subsurface soil.	High	Follow-On	City of Seattle, Port of Seattle	Planned	TBD		This work has been incorporated into the EE/CA (above).
	Complete needed assessments of portions of the site formerly occupied by the Malarkey plant.	High	Follow-On	City of Seattle, Port of Seattle	Planned	TBD		This work has been incorporated into the EE/CA (above).
	Install and sample additional groundwater monitoring wells.	High	New	City of Seattle, Port of Seattle	Complete	--	2008	Installed six additional wells and sampled all 11 wells quarterly through May 2009.
	Install and sample deeper monitoring well on Dallas Avenue to evaluate presence of NAPL.	Medium	Follow-On	City of Seattle, Port of Seattle	Complete	--	2009	
	Inspect current tenants in coordination with the Port of Seattle to determine if they are potential sources of recontamination.	Low	SCAP	Port of Seattle, Ecology	Complete	--	September 2006	The North Building tenant vacated in September 2006.

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Discuss condition and maintenance of onsite septic system with the port.	Low	SCAP	Port of Seattle, Ecology	Complete	--	February 2007	The South Building tenant vacated on February 28, 2007.
	Investigate T-117 property and sediments for the presence of dioxin.	Medium	Follow-On	Port of Seattle, City of Seattle	Complete	--	May 2009	
Adjacent Streets/Dallas Ave.	Conduct Interim Action to clean up PCBs in street soils.	High	SCAP	City of Seattle	Complete	December 2004	December 2004	Continue monitoring of stormwater and catch basin sediments.
	Continue monitoring of stormwater and catch basin sediments.	High	Follow-On	SPU, Port of Seattle	Ongoing	TBD		
	Remove PCB-contaminated soils in residential yards at 8601 and 8609 17th Avenue S, and restore yards.	High	SCAP	City of Seattle	Complete	June 2005	June 2005	
	Conduct cleanup action to remove PCB-contaminated street soils, install new storm drainage, and restore roads.	Medium	SCAP	City of Seattle	In Progress	2011		Install permanent stormwater collection/treatment system per Seattle code.
	Install permanent stormwater collection/treatment system per Seattle code.	Medium	Follow-On	City of Seattle	Planned	TBD		
	Investigate nearby streets and yards for the presence of dioxin.	Medium	Follow-On	City of Seattle	Complete	--	May 2009	
South Park Marina	Conduct inspection at South Park Marina, including review of waste management practices and compliance with permit.	Medium	SCAP	Ecology	Complete	June 2005		Conduct follow-up inspection.
	Conduct follow-up inspections until compliance is achieved.	Low	Follow-On	Ecology	Ongoing	TBD		
	Investigate sewer connections and discharge locations of storm drains and catch basins.	Low	SCAP	Ecology	Planned	2010		
	Investigate location and fate of A&B Barrel waste lagoon.	Medium	SCAP	Ecology	Complete	December 2005	June 2007	Conduct soil, groundwater, and bank sampling.
	Conduct soil, groundwater, and bank sampling.	Medium	Follow-On	Ecology, SAIC	Complete	--	July 2008	
	Sample soils adjacent to fence between Terminal 117 and South Park Marina due to contamination observed in borings at Terminal 117.	Medium	SCAP	Ecology	Complete	--	July 2008	
	Sample catch basins for metals and phthalates.	Low	SCAP	Ecology	Planned	2010		
Basin Oil	Monitor facility demolition and characterize soil and groundwater contamination.	Medium	SCAP	Ecology	Complete	--	June 2009	
	Refer for Site Hazard Assessment.	Medium	SCAP	Ecology	Complete	--	December 2005	Conduct Site Hazard Assessment.
	Conduct Site Hazard Assessment.	Medium	Follow-On	Ecology	Planned	TBD		
	Conduct joint EPA/Ecology compliance inspection.	Medium	SCAP	Ecology, EPA	Complete	May 2005	May 2005	

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Re-inspect as needed to ensure compliance.	Low	Follow-On	Ecology, SPU	Complete	--	June 2009	Site is vacant, soils have been excavated, and sampling has been completed; no further inspections are necessary.
Boeing South Park	Conduct inspection; review drainage system and stormwater pollution prevention practices, check status of hydraulic oil recovery, and look for other potential sources.	Low	SCAP	Ecology	Complete	December 2005	April 2007	

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the EAA-5 SCAP
Follow-On	Action item is a follow-on to an action item identified in the EAA-5 SCAP
New	Action item identified after publication of the EAA-5 SCAP

4.6 Early Action Area 6 (Boeing Isaacson/Central KCIA)

Properties adjacent to EAA-6 are shown in Figure 12; relevant upland properties in the central KCIA drainage basin are shown in Figure 13. Action items for this source control area are listed in Table 9.

Location	RM 3.7-3.9 East
Chemicals of Concern	Arsenic, PAHs, phthalates, PCBs, benzoic acid, benzyl alcohol, dibenzofuran, other metals
Data Gaps Evaluation	May 2008 (SAIC 2008b)
SCAP	May 2009 (Ecology 2009a)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Source Control Actions

- A SCAP was completed for this source control area in March 2009 (Ecology 2009a). The SCAP identified two adjacent properties, Boeing Isaacson and Boeing Thompson, and upland properties in the central portion of KCIA as potential sources of contaminants to LDW sediments. Stormwater from KCIA drains to EAA-6 through a 48-inch public storm drain outfall (KC Airport SD#2/PS45 EOF).

Source Tracing

- SPU installed a sediment trap in KC Airport SD#2 in a manhole just east of East Marginal Way S in October 2008 (Figure 5). A sediment trap sample was collected on March 26, 2009. In-line grab samples of solids from the sediment trap location were collected on September 25, 2008, and March 26, 2009. In addition, a grab solids sample was collected from the King County lift station (CB208), which pumps stormwater from 237 acres of central KCIA to the KC Airport SD#2 outfall, on June 3, 2009. Arsenic, copper, lead, zinc, TPH, PAHs, BEHP, di-n-octylphthalate, and carbazole were detected in the samples at concentrations below the storm drain screening values (Appendix E, Table 2). PCBs were detected in one grab sample at 0.092 mg/kg DW. An additional grab sample was collected from the sediment trap location on June 3, 2009; results were not available at the time this Status Report was prepared.
- Ecology investigated multiple instances of discolored/turbid water discharging from the KC Airport SD #2/PS45 EOF outfall in the fall of 2008. On March 17, 2009, Ecology inspectors conducted a site visit to inspect the discharge from this outfall. They indicated that the discharge may be due to iron bacteria in the pipe (Jeffers 2009b).

4.6.1 Boeing Isaacson/Thompson

Current Operations	Vacant (Boeing Isaacson); office space/storage (Boeing Thompson)
Historical Operations	Steel forging and fabrication, sawmill, wood preserving, aircraft manufacturing/assembly
Address	8541 to 8811 East Marginal Way S
Facility/Site ID	2218 (Boeing Isaacson Thompson) 1138721 (Boeing Isaacson Property) 83767996 (Boeing Thompson) 4274402 (Boeing Thompson Site)
Chemicals of Concern	Arsenic, lead, silver, zinc
Media Affected	Soil, groundwater, stormwater

- Boeing and Ecology are negotiating an Agreed Order to conduct an RI/FS and to prepare a draft Cleanup Action Plan for this site (Ecology 2009h).

4.6.2 King County International Airport

Current Operations	General aviation airport and related activities
Historical Operations	Military airport operations; general aviation
Address	7277 Perimeter Road S (main terminal); various tenant addresses
Facility/Site ID	NA
Chemicals of Concern	PAHs, phthalates, copper, zinc, petroleum hydrocarbons, PCBs
Media Affected	Stormwater, groundwater

Source Control Actions

- King County cleaned catch basins at KCIA during 2008; due to the large number of catch basins, the cleanout was divided into west, east, and central KCIA (Dumaliang 2009b). The east side (which included approximately 105 catch basins) was cleaned in September 2008. The west side (which included 62 catch basins and 3 oil/water separators) was cleaned in November 2008 (Dumaliang 2009b). Catch basins in the central portion will be cleaned in 2009 (Dumaliang 2009c).

Table 9. Source Control Action Items – Early Action Area 6 (Boeing Isaacson/Central KCIA)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
KC Airport SD #2/PS45 EOF	Collect and analyze sediment trap sample to evaluate concentrations of chemicals in the central KCIA drainage basin. Reinstall sediment trap and continue to sample as needed.	High	SCAP	SPU	In Progress	2015		Sediment trap installed in October 2008; first sample collected March 2009. To be discontinued in 2015 if concentrations remain low.
	If COCs are present in the storm drain line, conduct source tracing to identify potential contaminant sources at KCIA.	High	SCAP	King County, SPU	Planned	TBD		Contaminant concentrations in March 2009 sediment trap sample were below storm drain screening levels. Continue monitoring of sediment trap data through 2015.
	Collect and analyze a solids sample from near the KC Airport SD #2/PS45 EOF outfall to evaluate whether chemicals are being discharged to EAA-6 via this outfall.	Medium	SCAP	King County, SPU	Planned	2009		
	If COCs are present in the storm drain line downstream of CB-39, collect a solids sample from CB-39 on the Boeing Thompson property.	Medium	SCAP	Boeing	Planned	2009		
	Follow up on discharges observed from the KC Airport SD#2/PS45 EOF in 2007 and 2008, to identify sources and/or characteristics of discharges.	High	SCAP	Ecology, SPU, King County	In Progress	2009		Ecology inspection conducted March 2009.
Boeing Isaacson/Thompson Site	Negotiate an Agreed Order to conduct a MTCA RI/FS at the Boeing Isaacson/Thompson site.	High	SCAP	Ecology, Boeing	In Progress	2009		Boeing Isaacson and Thompson properties to be consolidated into a single site under the Agreed Order.
	Characterize contaminant concentrations in subsurface soil near the former location of the Slip 5 outfall, to the north of the 48-inch storm drain line, and at other locations on the property as needed.	High	SCAP	Boeing	Planned	2010		This work will be addressed under the Agreed Order.
	Conduct a comprehensive soil and groundwater investigation at this property, including groundwater monitoring at selected wells and evaluation of potential arsenic sources; include wet and dry season samples.	High	SCAP	Boeing	Planned	2010		This work will be addressed under the Agreed Order.
	If COCs in soil and groundwater are present at concentrations that pose a risk of sediment recontamination, then develop a plan for controlling these contaminant sources.	High	SCAP	Ecology, Boeing	Planned	2010		This work will be addressed under the Agreed Order.

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	If needed, conduct additional tidal studies to address the tidal efficiency anomaly identified in well I-205 during a tidal study conducted in 2000, and to collect additional information on tidal influences.	Low	SCAP	Boeing	Planned	2009		This work will be addressed under the Agreed Order.
	Collect bank samples and analyze them for COCs to evaluate potential for sediment recontamination from bank erosion.	Medium	SCAP	Boeing, Ecology, and/or Port of Seattle (TBD)	Planned	2010		This work will be addressed under the Agreed Order.
	Investigate the condition of the 48-inch KC Airport SD#2/PS45 EOF that passes through the Boeing Isaacson property.	Medium	SCAP	King County	Planned	2010		
	Clarify the purpose, function, and configuration of the edge drains along the Boeing Isaacson shoreline.	Low	SCAP	Boeing, Port of Seattle	In Progress	2010		
	Collect stormwater solids samples from the catch basins on the Boeing Isaacson property that drain to the Boeing Thompson stormwater system.	Medium	SCAP	Boeing	Planned	2010		This work will be addressed under the Agreed Order.
	Investigate the status and source of the unidentified outfall pipe located near the Boeing Isaacson/Jorgensen Forge property boundary (Outfall 2063).	Low	SCAP	Boeing	Planned	2010		This work will be addressed under the Agreed Order.
	Review Boeing memorandum regarding findings associated with the two drainage pipes that may be discharging to the 8801 Site, and assess the potential that these discharges may contribute to recontamination of LDW sediments.	Medium	SCAP	Ecology	In Progress	2010		
	Collect storm drain solids samples from the Boeing Thompson stormwater system to assess concentrations of contaminants.	Medium	SCAP	Boeing	Planned	2010		This work will be addressed under the Agreed Order.
	Conduct a source control inspection to clarify the nature of current activities at this property and to assess the current potential for sediment recontamination.	Low	SCAP	Ecology	Planned	2010		
King County International Airport (KCIA)	Conduct source tracing as needed, depending on sample results from the sediment trap recently installed on the KC Airport SD#2/PS45 EOF system.	Medium	SCAP	King County	Planned	TBD		The first sediment trap sample, collected in March 2009, does not indicate a need for additional source tracing.
	Verify the status of efforts to clean all catch basins in the central KCIA storm drain basin; complete cleaning as necessary.	Medium	SCAP	King County	In Progress	2009		
	Determine the presence or absence of PCB-containing joint caulking material within the central KCIA drainage basin.	High	SCAP	King County	Planned	2010		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Conduct a follow-up inspection at United Parcel Service (UPS) Boeing Field to verify that corrective actions have been taken with regard to elevated copper and zinc in stormwater.	Low	SCAP	Ecology	Planned	2009		
	Conduct a follow-up inspection at Ameriflight to identify which drains discharge to the storm drain system and to ensure that no contaminants are entering storm drains.	Low	SCAP	Ecology	Planned	2009		
	Assess/confirm the adequate completion of cleanup activities associated with petroleum Leaking Underground Storage Tanks (LUSTs) at Hangar Holdings.	Low	SCAP	Ecology	Planned	2009		
	Conduct a follow-up inspection at Western Metal Products to confirm that catch basins were cleaned out as requested, and to evaluate whether this facility should be required to obtain a stormwater permit.	Low	SCAP	SPU, Ecology	Planned	2009		
	Conduct a follow-up inspection at DHL Express to verify that corrective actions have been completed and that no contaminants are entering the storm drain system.	Low	SCAP	SPU	Planned	2009		
	Conduct re-inspections at KCIA tenant facilities for which the most recent compliance inspection was conducted more than 3 years ago, plus any new tenant facilities, to ensure that activities are in compliance with source control best management practices.	Medium	SCAP	SPU, Ecology, King County	Planned	2010		
	Monitor remedial activities at the former Boeing EMF to ensure that contaminated soil does not enter the storm drain system.	Medium	SCAP	King County, EPA	Planned	Until Boeing EMF remediation is complete		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the EAA-6 SCAP

4.7 Early Action Area 7 (Norfolk CSO/SD)

EAA-7 and relevant adjacent properties are shown in Figure 14; the Norfolk CSO basin is shown in Figure 4. Action items for this source control area are listed in Table 10.

Location	RM 4.9 East
Chemicals of Concern	PCBs, PAHs, phthalates, hexachlorobenzene, metals
Data Gaps Evaluation	September 2007 (E&E 2007b)
SCAP	September 2007 (Ecology 2007d)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Source Control Actions

Inspections

- In 2008, SPU inspected one business in the Norfolk storm drain basin. An initial inspection was conducted at Ohno Construction Company on February 2, 2009; 12 corrective actions were identified. As of March 2009, this business was in compliance with all applicable regulations/code. Businesses that were inspected by SPU during the reporting period are listed in Appendix B and their locations are shown in Figure 3.

Source Tracing

- In 2007, SPU installed sediment traps at five locations in the Norfolk CSO/EOF/SD system. Two rounds of sediment trap samples have been collected, in March/April 2008 and October 2008. Sediment trap locations are shown in Figure 4 and are presented in Appendix D, Table D3. Results were not available during preparation of the October 2008 Source Control Status Report and are therefore described briefly below.
    - Mercury was detected at 0.70 mg/kg DW in NST3 in March 2008, above the SQS of 0.41 mg/kg DW, but was not detected in the October 2008 sample. Zinc has been detected at concentrations ranging from 221 to 823 mg/kg DW, above the SQS in samples from sediment traps NST2, NST3, and NST4.
    - TPH-oil has been detected above the MTCA soil cleanup level in sediment trap NS2, located west of Airport Way S.
    - BEHP was detected at concentrations of 7.0 to 16.0 mg/kg DW in NST1, NST2, and NST3 in the March/April 2008 samples; concentrations were lower during the October 2008 sampling event (1.5 to 6.1 mg/kg DW).

4.7.1 Boeing Developmental Center (BDC)

Current Operations	Research and development
Historical Operations	Aircraft manufacturing
Address	9725 East Marginal Way S, Tukwila 98108
Facility/Site ID	4581384 (Boeing Development Center Norfolk) 2101 (Boeing A&M Developmental Center)
Chemicals of Concern	PCBs, metals, solvents, petroleum hydrocarbons, SVOCs
Media Affected	Soil, groundwater, stormwater, sediment

A removal action was implemented in the LDW immediately offshore of the south storm drain outfall in 2003; the removal action was performed by Boeing under Ecology's Voluntary Cleanup Program (VCP). Post-removal monitoring is being conducted to evaluate the effectiveness of source control measures that have been implemented in the south storm drain system.

Source Control Actions

- In April 2009, Boeing's contractor (Calibre Systems) published the *Summary of Storm Drain Line Cleanout Work and 2008 Annual Sampling Report, South Storm Drain System, Boeing Developmental Center* (CALIBRE 2009). This report presents results of the post-removal monitoring associated with the south storm drain system at BDC and documents additional cleaning performed in a segment of the storm drain system beneath Building 9-101 during 2008. Activities and results are summarized below.
    - Three solids samples were collected in February 2009; PCBs were not detected (<0.033 mg/kg DW) (CALIBRE 2009).
    - Annual cleanout of accumulated solids from the Vortechnics 9000 unit was completed, and further pressure washing (jet-rodding) of the storm drain line was conducted from the Vortechnics 9000 unit approximately 350 feet upstream towards and beneath Building 9-101. (This portion of the south storm drain system could not be accessed during initial cleaning of the system in 2002.) Sediment and washwater generated during the cleanout process was placed into Baker tanks at two temporary processing areas (one at Boeing Plant 2 and one at NBF) (CALIBRE 2009).
    - Annual sampling results from solids collected in this segment of the storm drain system have shown a steady decline in PCB concentrations since the initial cleanout; however, PCB concentrations remain above typical urban background concentrations (CALIBRE 2009).
    - One sample was collected from Manhole #3 in the storm drain line downstream of roof drains beneath Building 9-101 and upstream of the Vortechnics 9000 unit; PCBs were detected at 1.44 mg/kg DW. Two samples of the solids material captured by the Vortechnics 9000 unit were also collected; samples contained 32 mg/kg DW and 13 mg/kg DW total PCBs. No sample was collected from

Manhole #2, downstream of the Vortechnics unit, because the filter sock used for sample collection was missing.

- The total PCB load to the storm drain outfall was estimated as 0.55 gram/year (CALIBRE 2009).

- The next round of storm drain system sampling is scheduled for Fall 2009; servicing of the Vortechnics 9000 unit will be performed during late summer or fall of 2009.

4.7.2 Boeing Military Flight Center

Current Operations	Flight line support, including aircraft storage, preparation for flight, general servicing, maintenance, and repair
Historical Operations	Unknown
Address	10002 East Marginal Way S
Facility/Site ID	7711519
Chemicals of Concern	PCBs
Media Affected	Stormwater

Source Control Actions

- Boeing collected a solids sample from an oil/water separator at the Military Flight Center; this oil/water separator is connected to King County's Norfolk storm drain system (CALIBRE 2009). PCBs were reported as less than the method detection limit (<0.033 mg/kg DW).

Table 10. Source Control Action Items – Early Action Area 7 (Norfolk CSO/SD)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Norfolk CSO/SD/EOF	Compile available GIS data to gain a better understanding of the configurations, relationships, and interconnections of the various stormwater systems; conduct dye testing if needed.	Medium	SCAP	SPU, City of Tukwila, King County	Complete	--	July 2008	
	Obtain drainage plans for private properties along East Marginal Way S to better delineate drainage basin boundaries in this area.	Low	SCAP	SPU, City of Tukwila, King County	Planned	TBD		
	Conduct further source tracing and sampling within the Norfolk CSO/SD.	Medium	SCAP	Ecology, property owners	In Progress	TBD		Sediment traps installed at five locations; two rounds of sampling conducted as of October 2008.
Boeing Developmental Center (BDC)	Continue sediment monitoring in the vicinity of the south storm drain sediment removal activities.	High	SCAP	Boeing	In Progress	TBD		Samples collected in February 2009.
	Determine the source of PCBs in storm drain solids and conduct source control activities to remove PCBs from the system.	High	SCAP	Boeing	In Progress	TBD		Storm drain system beneath Building 9-101 cleaned in 2008.
	Continue monitoring storm drain solids.	High	SCAP	Boeing	In Progress	TBD		PCB concentrations declining. Additional storm drain sampling to be conducted in Fall 2009.
	Determine cleanup of PCB-containing caulk and other building materials.	Medium	SCAP	Ecology, Boeing	Planned	TBD		
	Re-evaluate SWPPP to determine whether process/operational changes have been made at the BDC, and modify as necessary to address new conditions.	Low	SCAP	Ecology, Boeing	Planned	TBD		
	Re-evaluate the Industrial Stormwater General Permit to assure that the appropriate parameters are measured to assess ongoing sources.	Low	SCAP	Ecology, Boeing	Planned	TBD		
	Determine whether groundwater and soil sampling are needed at Parcel 0423049016 to assess possible historic contamination.	Medium	SCAP	Ecology, Boeing	Planned	TBD		
Military Flight Center	Conduct testing to assess the effectiveness of removal of PCB-contaminated material; provide caulk removal and testing reports to Ecology.	Medium	SCAP	Boeing	Planned	TBD		
	Re-evaluate the SWPPP and NPDES permit and make any necessary changes, including parameters to address potential ongoing sources.	Low	SCAP	Ecology, Boeing	Planned	TBD		
	Conduct inspection to ensure that pollutant prevention practices are adequate and the facility is in compliance with its stormwater permit.	Low	SCAP	Ecology	Planned	TBD		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Monitor stormwater for PCBs at discharge points to assess potential ongoing sources.	Medium	SCAP	Boeing	Planned	TBD		
	Discuss cleanup options for removal of caulk containing PCBs at less than 50 mg/kg.	Medium	SCAP	Ecology, Boeing	Planned	TBD		
KCIA	Determine where the KCIA storm drain system connects to the Norfolk CSO/SD.	Low	SCAP	KCIA	Planned	TBD		
	Test and remove any material, if needed, in the southern portion of KCIA that contains elevated levels of PCBs (e.g., caulk containing PCBs).	Medium	SCAP	KCIA	Planned	TBD		
	Re-evaluate the SWPPP and make any necessary changes to address ongoing sources.	Low	SCAP	Ecology, KCIA	Planned	TBD		
Associated Grocers	Sample monitoring wells located near the former truck shop to evaluate current groundwater flow and extent of the contaminant plume; determine if additional monitoring wells are needed.	Medium	SCAP	Property owner	Planned	TBD		
	Re-evaluate the free product removal strategy to determine its source control effectiveness.	Medium	SCAP	Property owner	Planned	TBD		
	Determine whether additional groundwater and soil assessment is needed for the maintenance building where UST removal activities took place in 1995.	Medium	SCAP	Ecology	Planned	TBD		
	Apprise the City of Seattle Department of Planning & Development of the potential for new construction or redevelopment activities to encounter contaminated soil or groundwater, so that this can be addressed in the project construction dewatering plan.	Low	SCAP	SPU	Complete		Spring 2008	
	Evaluate spill prevention/cleanup plan for the two operational USTs to assure adequate control of potential spills.	Low	SCAP	Ecology, Property owner	Planned	TBD		
	Determine whether a SWPPP is required to address potential ongoing sources.	Low	SCAP	Ecology	Planned	TBD		
Northwest Auto Wrecking	Conduct soil, groundwater, surface water, and sediment sampling, as appropriate, to evaluate potential historical sources.	Medium	SCAP	Northwest Auto Wrecking	Planned	TBD		Review sampling results and assess potential for sediment recontamination.
	Review results of soil, groundwater, surface water, and/or sediment sampling to assess potential for sediment recontamination.	Medium	SCAP	Ecology	Planned	TBD		
	Conduct facility inspection to assess potential ongoing sources.	Low	SCAP	Ecology	Complete	--	July 2007	Business has closed; property is vacant. Conduct facility inspection once a new business is in place.
	Determine whether a NPDES permit and SWPPP are required.	Low	SCAP	Ecology	Not Required	--	July 2007	Not required; property is vacant.
	Obtain information pertaining to the storm drain system from Northwest Auto Wrecking to assess potential historic and ongoing sources.	Low	SCAP	Ecology	Complete	--	2005	

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Determine whether the storm drain system connects to the Norfolk CSO/SD.	Medium	SCAP	Northwest Auto Wrecking	Complete	--	2005	Business has closed; property is vacant.
	Once a new business is operating at this site, conduct a facility inspection to assess the potential for sediment recontamination associated with this property.	Low	Follow-On	Ecology, City of Tukwila, KCIW	Planned	TBD		
Affordable Auto Wrecking	Conduct surface water, soil, and groundwater sampling to assess the potential for sediment recontamination.	Medium	SCAP	Affordable Auto Wrecking	Planned	TBD		
	Determine whether the storm drain system connects to the Norfolk CSO/SD.	Medium	SCAP	Affordable Auto Wrecking, SPU, City of Tukwila	Planned	TBD		
	Inspect facility to ensure that recent drainage system modifications are functioning properly and that contaminated runoff does not flow into the municipal storm drain system on MLK Way.	Medium	SCAP	Ecology, SPU, KCIW	Planned	TBD		
	Determine cleanup options for removal of historically contaminated media, as appropriate.	Medium	SCAP	Ecology, Affordable Auto Wrecking	Planned	TBD		
	Re-evaluate the SWPPP and make necessary changes to address potential ongoing sources.	Low	SCAP	Ecology, Affordable Auto Wrecking	Planned	TBD		
	Oversee and monitor discharges to the combined sewer system.	Medium	SCAP	KCIW	Planned	TBD		
Arco Gas Station	Conduct soil sampling in the area adjacent to the former tank farm under the Voluntary Cleanup Program, to determine if soils are impacted and if remediation is necessary to control this potential contaminant pathway.	Medium	SCAP	Arco	Planned	TBD		
	Conduct additional groundwater monitoring.	Medium	SCAP	Arco	Planned	TBD		
	Based on results of soil and groundwater sampling, determine whether further actions are needed to address potential historical sources.	Medium	SCAP	Ecology	Planned	TBD		
	Determine if a SWPPP is required to address potential ongoing sources.	Low	SCAP	Ecology	Planned	TBD		
	Gain a better understanding of the storm drain system and possible historic or present connections to the Norfolk CSO/SD.	Low	SCAP	Ecology	Planned	TBD		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the EAA-7 SCAP
Follow-On	Action item is a follow-on to an action item identified in the EAA-7 SCAP

5.0 Source Control Activities: Tier 2 and Tier 3 Areas

Additional source control areas where long-term sediment cleanup actions may be implemented as part of the EPA ROD for the LDW Superfund Site are identified as Tier 2 Areas. At Tier 3 Areas, source control is necessary to prevent future sediment contamination from basins that may not drain directly to an identified sediment cleanup area.

As discussed in Section 2.1, the designation as a Tier 2 or Tier 3 source control area depends on whether or not it needs cleanup. Since the RI is still being developed and the ROD will not be published until 2010, there is currently no way to distinguish between Tier 2 and Tier 3 areas. This section discusses the 16 potential Tier 2 or Tier 3 source control areas.

Ecology will conduct source control evaluations for each of these areas, including review of existing information, identification of data gaps, and preparation of a SCAP. The 16 Tier 2 and Tier 3 areas and the seven EAAs (a total of 23 source control areas) are shown in Figure 2.

Site maps are presented in Figures 15 through 23 for those source control areas with completed SCAPs; these maps are intended to help identify locations discussed in the text below. Additional figures are available in the referenced reports.

5.1 RM 0.0-0.1 East (Spokane Street to Ash Grove Cement)

RM 0.0-0.1 East (Spokane Street to Ash Grove Cement) and relevant adjacent and upland properties are shown in Figure 15. Source control action items for this source control area are listed in Table 11.

Location	RM 0.0-0.1 East
Chemicals of Concern	Metals, PAHs, phthalates, PCBs
Data Gaps Evaluation	December 2008 (E&E 2008c)
SCAP	June 2009 (Ecology 2009k)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Area-Wide Source Control Actions

- A *Summary of Existing Information and Identification of Data Gaps Report* was completed in December 2008 (E&E 2008c).
- A SCAP for this source control area was completed and published in June 2009 (Ecology 2009k). Three properties were identified as potential sources of sediment recontamination within this source control area: the Harbor Marina Corporate Center (Terminal 102), Port of Seattle Terminal 104, and Ash Grove Cement.

5.1.1 Ash Grove Cement

Current Operations	Cement manufacturing
Historical Operations	Cement manufacturing, clinker production
Address	3801 East Marginal Way S
Facility/Site ID	2142
Chemicals of Concern	Copper, antimony, chromium, other heavy metals, PCBs, petroleum hydrocarbons
Media Affected	Groundwater, soil

Source Control Actions

- An inspection of the Ash Grove Cement facility conducted by Ecology and SPU on January 14, 2009, found that stormwater from the facility flows to a storm drain that discharges to the City of Seattle storm drain on East Marginal Way S, which discharges to the East Waterway via the S Hinds Street storm drain (SPU 2009a). Numerous compliance issues related to spill management, stormwater management, and waste management were identified.
- No direct stormwater drainage to the LDW was observed, although there is a potential for localized runoff along the edge of the waterway, particularly near the southwest corner of the site (Robinson 2009b). Stormwater from Stoneway Concrete, located adjacent to Ash Grove Cement, also discharges stormwater to the Ash Grove storm drain system. Sanitary wastes and water from the truck/wheel wash stations are discharged to the King County Interceptor.
- A sample of solids and water were collected from the detention chamber where stormwater from both facilities accumulates before it is pumped to the East Marginal Way S storm drain line (Robinson 2009b). BEHP, copper, lead, and zinc were detected in the solids sample; concentrations were well below the storm drain screening values.
- Ash Grove Cement submitted an application for an Individual NPDES Permit on April 9, 2009. The application was still in process at the time of the publication of the SCAP (Ecology 2009k).

Table 11. Source Control Action Items – RM 0.0-0.1 East (Spokane Street to Ash Grove Cement)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/ Follow-On Actions
Harbor Marina Corporate Center / Port of Seattle Terminal 102	Inspect drainage connections to all outfalls. Work with adjacent property owners to clarify origins and ownership of each outfall at the HMCC.	Low	SCAP	Ecology, Port of Seattle	Planned	August 2010		
	Determine the permitting requirements and responsible parties for each outfall. Work with adjacent property owners to confirm permit requirements for outfall HRE-1 and assign appropriate responsibility.	Medium	SCAP	Ecology, Port of Seattle	Planned	August 2010		
	Demonstrate that the marina is in compliance with all applicable permits.	High	SCAP	Port of Seattle	Planned	August 2010		
Port of Seattle Terminal 104	Determine how to address identified data gaps in the western portion of T-104.	High	SCAP	Ecology, Port of Seattle	Planned	April 2012		
	Prepare and submit an annual report to document groundwater monitoring results and provide recommendations for future remedial efforts as stated in the VCP Cleanup Action Plan.	Medium	SCAP	Port of Seattle	Planned	2009		
	Ensure that storm drain structures and function are completely delineated and properly permitted. Existing drainage problems have been identified and need to be addressed.	High	SCAP	Ecology, Port of Seattle	Planned	February 2010		
	Review post remediation reports and annual report as part of the VCP and determine whether further action is needed.	High	SCAP	Ecology	Planned	TBD		
Ash Grove Cement	Negotiate an agreed order for a Remedial Investigation/ Feasibility Study that will focus on potential soil and groundwater contamination at the site.	High	SCAP	Ecology, Ash Grove Cement	Planned	April 2010		
	Obtain a new NPDES permit for discharge into the City storm drain that discharges at S Hind Street.	High	SCAP	Ecology, Ash Grove Cement	Planned	December 2009		
	Ensure that storm drain system structures and function are delineated, properly permitted, and existing drainage problems have been identified.	Medium	SCAP	Ecology	Planned	August 2010		
	Demonstrate appropriate separation of wastewater from storm water and install an appropriate treatment system.	Medium	SCAP	Ash Grove Cement	Planned	2010		
	Inspect condition and operational records of the groundwater well used for cooling water to ensure that it cannot release contaminants into the aquifer.	Medium	SCAP	Ecology	Planned	August 2010		
	Conduct additional source control inspections to ensure compliance and implementation of BMPs.	High	SCAP	Ecology, Seattle Public Utilities	Planned	August 2010		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the RM 0.0-0.1 East SCAP

5.2 RM 0.9-1.0 East (Slip 1)

RM 0.9-1.0 East (Slip 1) and relevant adjacent and upland properties are shown in Figure 16. Source control action items for this source control area are listed in Table 12.

Location	RM 0.9-1.9 East
Chemicals of Concern	Metals, PAHs, BEHP, PCBs, dioxins/furans
Data Gaps Evaluation	August 2008 (SAIC 2008c)
SCAP	May 2009 (Ecology 2009e)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Area-Wide Source Control Actions

- A SCAP for this source control area was completed and published in May 2009 (Ecology 2009e). Three properties were identified as potential sources of contaminants to sediments associated with the Slip 1 source control area. These are: Federal Center South, the former Snopac Products property, and the Manson Construction property. Several private storm drain outfalls are present at the Federal Center South property; no municipally owned outfalls are located within the Slip 1 source control area.

Table 12. Source Control Action Items – RM 0.9-1.0 East (Slip 1)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/ Follow-On Actions
Federal Center South	Review historical property files for information regarding the status and contents of three 30,000-gallon USTs; determine if sediment COCs may be present in soil and groundwater in this area.	Medium	SCAP	Ecology	Planned	February 2010		
	If file review indicates that sediment COCs may be present in soil and/or groundwater, require the property owner/operator to perform an environmental assessment of soil and groundwater around the 30,000-gallon UST area.	Medium	SCAP	EPA	Planned	January 2011		
	Conduct a visual bank survey; collect and analyze bank soil samples for sediment COCs to evaluate the potential for sediment recontamination from bank erosion.	Medium	SCAP	Ecology, property owner/operator	Planned	TBD		
	Perform Site Hazard Assessment (SHA).	High	SCAP	Ecology	Planned	August 2010		
	Conduct a follow-up stormwater inspection at the facility to verify completion of corrective actions requested in June 2004, and to collect information on current site operations/conditions.	High	SCAP	Ecology, EPA, SPU	Planned	December 2009		
	Determine if Federal Center South must apply for coverage under the industrial stormwater general permit.	Medium	SCAP	EPA, Ecology	Planned	December 2009		
Former Snopac Products Property	Review responses to EPA's Request for Information 104(e) Letter sent to Unimar in July 2008; assess potential for historical release(s) of arsenic or other sediment COCs to soil and groundwater beneath this property.	Medium	SCAP	Ecology	Planned	December 2009		
	If there is potential for historical releases, require the property owner/operator to collect soil and groundwater samples and analyze them for sediment COCs. Prepare and implement a plan to remediate soil and/or groundwater, as needed.	Medium	SCAP	Ecology	Planned	2010		
	If EPA sends a 104(e) Request for Information Letter to Snopac Products, review responses for relevant information on potential sources of contaminants to Slip 1.	Medium	SCAP	Ecology	Planned	TBD		
	Collect additional samples from Seep 76 to determine if the arsenic concentration reported in 2004 was an anomaly. Analyze sample for all sediment COCs.	High	SCAP	Ecology	Planned	June 2010		
	Conduct a visual bank survey during low tide conditions; collect and analyze bank soil samples for sediment COCs to evaluate the potential for sediment recontamination from bank erosion and leaching. Reconnaissance cores should be collected along the top and bottom of the bank to determine "as is" conditions.	Medium	SCAP	Ecology	Planned	TBD		
	Obtain information from Snopac or other historical property owners regarding the construction of the dock adjacent to the property. If no information is available, perform an evaluation of the materials used to construct the dock.	Medium	SCAP	Ecology	Planned	December 2009		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/ Follow-On Actions
	Perform an inspection at the facility when or if a new business occupies the property to ensure compliance with applicable regulations/codes.	Medium	SCAP	Ecology, SPU, King County	Planned	TBD		
Manson Construction Company	Obtain laboratory data and site plans from historical site assessment(s) and remediation performed at the property. Confirm that satisfactory completion of soil cleanup activities was achieved. Determine if arsenic or other sediment COCs are present in soil and groundwater beneath the facility at concentrations that may recontaminate sediments.	High	SCAP	Ecology	Planned	2010		
	If satisfactory soil cleanup was not achieved, require the property owner/operator to conduct a site assessment to determine residual concentrations of sediment COCs in soil and groundwater beneath the property.	High	SCAP	Ecology	Planned	2010		
	Collect additional samples from Seep 76 to determine if the arsenic concentration reported in 2004 was an anomaly. Analyze sample for all sediment COCs.	High	SCAP	Ecology	Planned	June 2010		
	Conduct a visual bank survey during low tide conditions; collect and analyze bank soil samples for COCs. Reconnaissance cores should be collected along the top and bottom of the bank to determine "as is" conditions.	Medium	SCAP	Ecology	Planned	TBD		
	Review responses to EPA's Request for Information 104(e) letter sent to Manson Construction in July 2008.	Medium	SCAP	Ecology	Planned	December 2009		
	Inspect the facility to verify that stormwater is discharged to the sanitary sewer and to ensure that operations at the facility are in compliance with applicable regulations/codes.	Medium	SCAP	SPU, Ecology, King County	Planned	July 2009		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the RM 0.9-1.0 East SCAP

5.3 RM 1.0-1.2 East (King County lease parcels)

No source identification or control activities have been conducted to date.

5.4 RM 1.2-1.7 East (St. Gobain to Glacier Northwest)

RM 1.2-1.7 East (St. Gobain to Glacier Northwest) and relevant adjacent and upland properties are shown in Figure 17. Source control action items for this source control area are listed in Table 13.

Location	RM 1.2-1.7 East
Chemicals of Concern	Mercury, zinc, PAHs, PCBs, BEHP, benzyl alcohol, phenol
Data Gaps Evaluation	February 2009 (E&E 2009)
SCAP	June 2009 (Ecology 2009l)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Area-Wide Source Control Actions

- A *Summary of Existing Information and Identification of Data Gaps Repor*t was completed in February 2009 (E&E 2009).
- A SCAP for this source control area was completed and published in June 2009 (Ecology 2009l). The SCAP identified three facilities adjacent to the LDW with the potential to contaminate sediments associated with the RM 1.2-1.7 East source control area: Saint Gobain Containers, Longview Fibre Paper and Packaging, and Certainteed Gypsum, Inc. In addition, four upland facilities were identified as having the potential to recontaminate sediments via groundwater transport: Philip Services Corporation, Art Brass Plating, Blaser Die Casting, and Capital Industries, Inc.

5.4.1 Philip Services Corporation

Current Operations	Storage area for corrective actions in progress at the facility
Historical Operations	Hazardous waste treatment, storage and disposal
Address	734 S Lucile Street
Facility/Site ID	47779679
Chemicals of Concern	BTEX, chlorinated solvents, 1,4-dioxane, PAHs, phenols, PCBs, and metals
Media Affected	Groundwater

Source Control Actions

- Philip Services Corporation (PSC) is currently negotiating an access agreement with the owner of 637 S Lucile Street, a property that was once used by General Electric and used

1,1,1-trichloroethane in a vapor degreaser. PSC plans to sample soils, soil gas, and groundwater on the property and determine if any releases in the past at the former General Electric property may be adding to the groundwater contamination they are detecting in their wells (Ecology 2009l).

5.4.2 Art Brass Plating

Current Operations	Metal plating and polishing; manufacturing of wood stoves, office equipment, and store fixtures; recycling of automobile steel bumper and plastic bumper covers for the collision repair industry
Historical Operations	Manufacturing of builders' hardware; nickel, cadmium, zinc, silver, copper, chromium, brass, and bronze plating
Address	5516 3rd Avenue S
Facility/Site ID	88531932
Chemicals of Concern	Chlorinated solvents, arsenic, barium, iron, manganese
Media Affected	Soil, groundwater

Source Control Actions

- Under an Agreed Order with Ecology (No. DE-5296), Art Brass Plating is required to conduct an RI and implement interim actions. Sampling has been conducted since 1999. In 2008, the facility implemented an air sparging and soil vapor extraction (SVE) interim action beneath the property, which extends across 3rd Avenue S, north of S Findlay Street. Further information about the interim action was not available at the time this Status Report was prepared (Ecology 2009l).
- Art Brass Plating began the RI in 2009 (Ecology 2009l). High levels of trichloroethylene (TCE) have been detected in groundwater as far west as 1st Avenue S. Elevated levels of nickel have also recently been found in some groundwater samples. Additional information about the RI was not available at the time this Status Report was prepared.

5.4.3 Blaser Die Casting

Current Operations	Die casting
Historical Operations	Die casting (since 1962); residential or unoccupied prior to 1962
Address	5700 3rd Avenue S
Facility/Site ID	7118747
Chemicals of Concern	Chlorinated solvents
Media Affected	Soil, groundwater

Source Control Actions

- Blaser Die Casting is currently performing an RI under a MTCA enforcement order (Order No. DE-5479) (Ecology 2009l).

- On April 15, 2009, a dangerous waste compliance inspection was conducted at Blaser Die Casting. Multiple compliance issues were observed during the inspection. These compliance issues included improper discharges into the sanitary sewer, improperly designated wastes, improperly maintained storm drains, improperly recycled wastes, poor spill response procedures, and improperly stored products/wastes. There was no evidence observed of solvent use on site. Floor drains within areas of operation are connected to the sanitary sewer. There is an underground vault for stormwater detention beneath the building but no details were available (Ecology 2009l).

5.4.4 Capital Industries Inc.

Current Operations	Metal fabrication
Historical Operations	Metal fabrication since 1965; residential before 1965
Address	5801 3rd Avenue S
Facility/Site ID	11598755
Chemicals of Concern	Chlorinated solvents, manganese, 1,4-dioxane
Media Affected	Groundwater

Source Control Actions

- In 2008, groundwater sampling was conducted downgradient of Plant 2 and 4. Analytical results revealed TCE and breakdown products south and west of Plants 2 and 4 extending to at least 1st Avenue S and 300 feet to the south (Ecology 2009l). Groundwater contamination was found to extend westward to at least 1st Avenue S and about 300 feet southward of S Fidalgo Street. Concentrations of tetrachloroethene (PCE) and TCE have been detected in soil above the screening levels at Plant 4 only. A second phase of direct push groundwater sampling further south and west is due to start as soon as access agreements are obtained. This work is being performed in accordance with Agreed Order DE-5348 (Ecology 2009l).

Table 13. Source Control Action Items – RM 1.2-1.7 East (St. Gobain to Glacier Northwest)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Saint Gobain Containers Inc.	Review response to EPA 104(e) Request for Information letter sent to Saint Gobain Containers Inc. (SGCI) in July 2008.	High	SCAP	Ecology	Planned	April 2010		Evaluate need for further investigations.
	Determine appropriate engineering controls for the inaccessible contamination located beneath the soil/water separator described in the 1991 Limited UST Assessment.	High	SCAP	Property Owner/Operator	Planned	December 2012		
	Conduct a source control inspection to confirm compliance with regulations/permits and implementation of BMPs.	Medium	SCAP	Ecology, SPU	Planned	October 2010		
	Sample catch basins as needed.	Medium	SCAP	Ecology, SPU	Planned	October 2010		If needed, conduct source tracing.
Longview Fibre Paper and Packaging	Review response to EPA 104(e) Request for Information letter sent to Longview Fibre Paper and Packaging in March 2008.	High	SCAP	Ecology	Planned	April 2010		Evaluate need for further investigations.
	Review the latest groundwater monitoring report regarding exceedances of TPH-D.	High	SCAP	Ecology	Planned	December 2012		If needed, require the property owner/operator to prepare a remedial action plan.
	Conduct a source control inspection to confirm compliance with regulations/permits and implementation of BMPs.	Medium	SCAP	Ecology, SPU	Planned	October 2010		
	Sample catch basins as needed.	Medium	SCAP	Ecology, SPU	Planned	October 2010		If needed, conduct source tracing.
Certainteed Gypsum	Review response to EPA 104(e) Request for Information letter sent to Certainteed Gypsum in July 2008.	High	SCAP	Ecology	Planned	April 2010		Evaluate need for further investigations.
	Conduct a source control inspection to confirm compliance with regulations/permits and implementation of BMPs.	Medium	SCAP	Ecology, SPU	Planned	October 2010		
	Sample catch basins as needed.	Medium	SCAP	Ecology, SPU	Planned	October 2010		If needed, conduct source tracing.
	Locate and review the 500 gallon UST closure report documented in Ecology's UST database. Evaluate the potential for groundwater contamination.	Low	SCAP	Ecology	Planned	October 2010		
Philip Services Corporation	Negotiate Agreed Orders and issue new permit. One order will include implementation of the Cleanup Action Plan for the eastern portion of the site.	Medium	SCAP	Ecology, PSC	Planned	December 2014		
Art Brass Plating	Complete interim action and RI in accordance with Agreed Order.	Medium	SCAP	Art Brass Plating	Planned	December 2014		
	Conduct a source control inspection to confirm compliance with regulations/permits and implementation of BMPs.	Medium	SCAP	Ecology, King County	Planned	October 2010		
Blaser Die Casting	Complete RI in accordance with MTCA Enforcement Order.	Medium	SCAP	Blaser Die Casting	Planned	December 2014		
Capital Industries Inc.	Complete RI report in accordance with Agreed Order.	Medium	SCAP	Capital Industries	Planned	December 2014		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the RM 1.2-1.7 East SCAP

5.5 RM 1.7-2.0 East (Slip 2 to Slip 3)

RM 1.7-2.0 East (Slip 2 to Slip 3) and relevant adjacent and upland properties are shown in Figure 18. The Michigan Street CSO Basin is shown in Figure 19. Source control action items for this source control area are listed in Table 14.

Location	RM1.7-2.0 East
Chemicals of Concern	To be determined
Data Gaps Evaluation	February 2009 (SAIC 2009a)
SCAP	June 2009 (Ecology 2009i)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Source Control Actions

- A *Summary of Existing Information and Identification of Data Gaps Report* was completed in February 2009 (SAIC 2009a).
- A SCAP for this source control area was completed and published in June 2009 (Ecology 2009i). The SCAP identified one public storm drain (1st Avenue S Bridge Storm Drain), one CSO outfall (Michigan Street CSO), and several private outfalls that discharge to the LDW within this source control area.

  Properties adjacent to the LDW that represent potential sources of contaminants to the LDW include Glacier Northwest (the Duwamish Ready-Mix Concrete Plant), Seattle Biodiesel, Duwamish Marine Center, Samson Tug and Barge, Duwamish Metal Fabricators, and a Seattle Department of Transportation parcel. In addition, several facilities that are not adjacent to the waterway but are located within the Slip 2 to Slip 3 storm drain basin were identified; the former Frank's Used Cars property, Bank and Office Interiors, Fittings, Inc., and the former Consolidated Freightways property were identified as potential sediment recontamination sources or for which insufficient information was available to assess the potential for sediment recontamination.

  The Michigan Street CSO serves an area of approximately 1,900 acres. Within the Michigan Street CSO basin are numerous industrial and commercial facilities, including 206 facilities with Ecology Facility/Site ID numbers, 22 facilities listed on Ecology's Confirmed and Suspected Contaminated Sites List (CSCSL), 40 facilities with active EPA ID numbers, 22 facilities with NPDES permit, 14 facilities with KCIW discharge authorizations or permits, and 77 facilities listed on Ecology's UST/LUST lists.

5.5.1 Seattle Biodiesel

Current Operations	Research and development of biofuels
Historical Operations	Biodiesel refinery
Address	6335 1st Avenue S
Facility/Site ID	5023482 (Seattle Biodiesel LLC)
Chemicals of Concern	Glycerin, methanol, vegetable oil
Media Affected	Surface water

Source Control Actions

- Ecology issued a Notice of Penalty (No. 6256) in the amount of $20,000 to Imperium Renewables on December 4, 2008, for the July 2007 discharge of approximately 391 gallons of a process mixture consisting of crude glycerin, methanol, canol methyl esters, sodium methalate, and vegetable oil to Slip 2. The spill occurred as the process mixture was transferred from a 6,600-gallon decanter into 300-gallon totes. The facility has since transitioned from a refinery to a research and development facility focused on identifying and commercializing next generation biofuels (Ecology 2009i).

5.5.2 Duwamish Marine Center

Current Operations	Repair, storage, and maintenance of construction equipment; container storage; vehicle equipment maintenance
Historical Operations	Barge shipping terminal; cargo container manufacturing; construction material assembly; marine railway; cargo loading and unloading
Address	16 S Michigan Street; 6365 1st Avenue S
Facility/Site ID	21945598 (Duwamish Marine Center) 71371939 (Duwamish Marine Center Inc) 1020256 (Samson Tug and Barge)
Chemicals of Concern	Metals (cadmium, copper, lead, mercury, silver, zinc), PCBs, PAHs, pentachlorophenol, benzene, tetrachloroethene, petroleum hydrocarbons
Media Affected	Soil, groundwater

Source Control Actions

- As described in the SCAP for RM 1.7-2.0 East, Ecology recently approved a sampling plan for the Duwamish Marine Center. The sampling plan includes a 72-hour tidal study, catch basin solids sampling, and groundwater sampling. Prior to approving the sampling plan, Ecology requested that the scope of work also include river bank sampling and installation of at least three deep groundwater monitoring wells along the edge of the property and adjacent to the LDW. Work is currently underway (Ecology 2009i).
- The Duwamish Metal Fabricators facility was inspected by SPU and Ecology on July 23, 2008. The company is operating without an Industrial Stormwater General Permit. SPU directed Duwamish Metal Fabricators to obtain an NPDES permit for discharge, create

spill response procedures, improve spill response materials, properly educate employees, and clean the facility's catch basins. SPU re-inspected the facility on October 23, 2008, and found that Duwamish Metal Fabricators had completed the corrective actions. However, the status of the facility's NPDES permit is not known (Ecology 2009i).

Table 14. Source Control Action Items – RM 1.7-2.0 East (Slip 2 to Slip 3)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
1st Avenue S Bridge Storm Drain (Outfall 2503)	Assess the effectiveness of the vegetated swale in treating stormwater discharged via Outfall 2503.	Medium	SCAP	Ecology	Planned	September 2011		
	Conduct business inspections at properties with stormwater drainage to the 1st Avenue S Bridge outfall, including Seattle Truck Repair, Evergreen Tractor, and the former Taco Time parcel.	Medium	SCAP	SPU, Ecology	Planned	June 2010		
Michigan Street CSO	Provide data regarding contaminant concentrations in Michigan Street CSO discharges.	Medium	SCAP	King County	Planned	December 2009		
	Conduct business inspections within the Michigan Street CSO basin to identify undocumented and unregulated industrial operations, if any, that may represent sediment recontamination sources.	Low	SCAP	SPU	Planned	December 2011		
	Conduct a stormwater compliance inspection at the King County Airport Staging Yard/Georgetown Yard; this facility is covered under the Industrial Stormwater General Permit but no information on inspections was identified.	Low	SCAP	Ecology	Planned	December 2009		
Slip 2 Outfall (Glacier Northwest; Outfall 2019)	Conduct business inspections at properties with stormwater drainage to Outfall 2019, including Bank and Office Interiors, Ener-G Foods, and Shippers Transport Express (formerly Consolidated Freightways).	Medium	SCAP	SPU, Ecology	Planned	June 2010		
	Identify the owner of Outfall 2019 and evaluate the adequacy of existing NPDES permits with regard to stormwater discharges from this outfall.	Medium	SCAP	SPU, Ecology	Planned	December 2009		
	Review response to EPA Section 104(e) Request for Information submitted by Ener-G Foods to determine whether this facility is a potential source of LDW sediment recontamination.	Medium	SCAP	Ecology	Planned	March 2010		
Glacier Northwest, Inc. (5975 East Marginal Way S)	Conduct a follow-up source control inspection to verify compliance with previous recommendations.	Medium	SCAP	Ecology	Planned	October 2009		
	Request additional information from Glacier Northwest regarding the process water treatment and recycling system at the facility, including the capacity of the system and the frequency and volume of discharges to the LDW.	Medium	SCAP	Ecology	Planned	October 2009		If discharges are frequent, collect catch basin solids samples and/or effluent discharge samples as needed.
	Request additional information from Glacier Northwest regarding (a) the trench drain installed in 1985; (b) the storm drain line shown on SPU maps that appears to discharge to Slip 2 approximately half-way between the head and mouth of the slip; (c) connections to Outfall 2018, if any; and (d) ownership of Outfall 2019.	Medium	SCAP	Ecology	Planned	October 2009		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Review information submitted by Glacier Northwest in response to EPA Section 104(e) Request for Information.	Medium	SCAP	Ecology	Planned	March 2010		
Seattle Biodiesel (6335 1st Avenue S)	Conduct a follow-up source control inspection to verify compliance with Ecology recommendations and applicable regulations/codes.	Medium	SCAP	Ecology	Planned	October 2009		
	Collect information regarding chemical concentrations in bank soils.	Medium	SCAP	Ecology	Planned	TBD		
	Review information submitted by Lonestar Investors LP (the property owner) in response to EPA Section 104(e) Request for Information.	Medium	SCAP	Ecology	Planned	March 2010		
Duwamish Marine Center (16 S Michigan Street; 6365 1st Avenue S)	Conduct a follow-up source control inspection at Duwamish Marine Center to verify compliance with applicable regulations/code and implementation of appropriate stormwater BMPs.	Medium	SCAP	Ecology, SPU	Planned	September 2009		
	Conduct a follow-up business inspection at Samson Tug and Barge to verify compliance with corrective actions requested by SPU in July and October 2008. Also verify that the cleaning solution tank belonging to Burgess Enterprises has been removed.	Medium	SCAP	SPU	Planned	September 2009		
	Determine the status of Outfalls 2021 and 2022; if they are currently in use, determine the area drained by these outfalls and assess the potential for COCs to reach the LDW via this pathway.	High	SCAP	SPU, Ecology	Planned	January 2010		
	Verify the status of NPDES permits for Samson Tug and Barge and Duwamish Metal Fabricators.	Medium	SCAP	Ecology	Planned	September 2009		
	Require the property owner/operator to collect additional soil/groundwater data.	High	SCAP	Ecology	In Progress	December 2009		In April 2008, Ecology approved a sampling plan for the Duwamish Marine Center, with conditions. The data collected during this evaluation may be sufficient to evaluate the potential for sediment recontamination.
	Require the property owner/operator to collect data on concentrations of chemical contaminants in river bank soils to assess the potential for sediment recontamination by erosion.	High	SCAP	Ecology	Planned	December 2009		
	Review information submitted by James Gilmur and Samson Tug and Barge in response to EPA Section 104(e) Requests for Information.	Medium	SCAP	Ecology	Planned	March 2010		
Seattle Department of Transportation Parcel (6501 1st Avenue S)	Complete discussions with the adjacent property owner to prevent parking and vehicle maintenance on the Seattle DOT property.	Low	SCAP	SPU	In Progress	December 2009		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Former Frank's Used Cars (6309 East Marginal Way S)	Conduct a brief site visit to assess current site conditions and determine whether stormwater from this property is a potential source of sediment recontamination.	Low	SCAP	Ecology, SPU	Planned	December 2010		
	Review the current status of cleanup activities at this site to determine whether residual soil contamination poses a risk of sediment recontamination.	Medium	SCAP	Ecology	Planned	December 2009		
Bank and Office Interiors/Other Tenants (5960 1st Avenue S; 5990 1st Avenue S)	Conduct source control inspections at Bank and Office Interiors and other businesses located on this property.	Medium	SCAP	SPU, Ecology	Planned	June 2010		
	Review information submitted by Ener-G Foods in response to EPA 104(e) Request for Information.	Low	SCAP	Ecology	Planned	March 2010		
Fittings, Inc. (5979 4th Avenue S)	Determine whether this facility should apply for coverage under the Industrial Stormwater General Permit	Medium	SCAP	Ecology	Planned	September 2009		
Former Consolidated Freightways (6050 East Marginal Way S)	Conduct a site inspection to identify whether activities along the western edge of the property (in the area that drains to Slip 2) could be a source of sediment recontamination via stormwater discharge.	Low	SCAP	Ecology, SPU	Planned	June 2010		
	Locate and review the results of soil and groundwater sampling proposed in 2000 (if the sampling plans were implemented), and assess the potential for sediment recontamination via groundwater transport.	Medium	SCAP	Ecology	Planned	December 2009		
	Search for additional information regarding the two dump areas located at this property in 1940, as identified in historical aerial photographs, and evaluate the potential for sediment recontamination associated with these areas.	Medium	SCAP	Ecology	Planned	December 2010		
Facilities Within the Michigan Street CSO Basin	Emerald Tool, Inc.: Conduct a business inspection at this facility; request information regarding concentrations of sediment COCs in soil and catch basins at this property.	Low	SCAP	SPU, Ecology	Planned	December 2010		
	Kelly Moore Paint Company: Assess the current nature and extent of soil and groundwater contamination associated with this facility to determine the potential for contaminated groundwater to infiltrate the combined sewer system.	Low	SCAP	Ecology	Planned	December 2010		
	Kelly Moore Paint Company: Determine the current status of cleanup efforts to evaluate whether additional remedial activities are required.	Low	SCAP	Ecology	Planned	December 2010		
	Pioneer Porcelain Enamel Company: Conduct a business inspection to assess current activities at the site and verify that they are in compliance with applicable regulations/code and have implemented appropriate stormwater BMPs.	Low	SCAP	SPU, Ecology	Planned	December 2010		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Former Unocal Service Station 0907: Conduct a site inspection to verify current activities at the site and that activities are in compliance with applicable regulations/code and that appropriate stormwater BMPs have been implemented.	Low	SCAP	Ecology	Planned	December 2010		
	Pioneer Porcelain Enamel Company, Scougal Rubber Corporation, former Sonn Property, former Unocal Service Station 0907, Winters Investment LP/Riveretz's Auto Care/Former Georgetown Gasco/Tesoro: Request the property owner to provide information regarding the nature and extent of soil contamination at the site to determine if contaminants in soil may be leaching to groundwater, and if contaminated groundwater may then be infiltrating into the combined sewer system.	Low	SCAP	Ecology	Planned	December 2010		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the RM 1.7-2.0 East SCAP

5.6 RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)

RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works) and relevant adjacent and upland properties are shown in Figure 20. Source control action items for this source control area are listed in Table 15.

Location	RM 2.0-2.3 East
Chemicals of Concern	Metals, PAHs, PCBs, chlorobenzene, benzyl alcohol
Data Gaps Evaluation	June 2008 (E&E 2008b)
SCAP	April 2009 (Ecology 2009d)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Source Control Actions

- A SCAP for this source control area was completed and published in April 2009 (Ecology 2009d). The SCAP identified two public outfalls (S River Street SD and S Brighton Street CSO/SD) that discharge to this source control area. Facilities adjacent to the LDW that represent potential sources of contaminants to LDW sediments include SCS Refrigerated Services, Seattle Distribution Center, and Glacier Marine Services. Upland facilities of potential concern include V. Van Dyke, Riverside Industrial Park, Shultz Distributing, and Cascade Columbia Distribution (Fox Avenue Building LLC).
- On March 24, 2009, a train snagged a Seattle City Light telephone pole guy-wire, causing the pole to snap in half and turn upside down. While inverted, two transformers on the pole (33-gallon and 20-gallon capacity, respectively) leaked approximately 43 gallons of oil to the roadway and two catch basins near S River Street and 2nd Avenue S. The storm drain discharges to the LDW via the S River Street SD outfall (Ecology 2009c). The storm drains were cleaned and pressure washed three times; testing of wipe samples from the storm drain did not detect PCBs. Reportedly, none of the spilled material reached the LDW due to a mud/debris dam in the storm drain system (Ecology 2009c).

Business Inspections

- SPU conducted an initial inspection at SCS Refrigerated Services on March 6, 2009. Six corrective actions were identified including: storm drain facility needs to be cleaned; missing or damaged components to storm drain facility need replacement/repair; properly label containers; properly educate employees; improve or create spill response procedures; and improve or purchase adequate spill response materials. A follow-up inspection on May 22, 2009, found the facility in compliance with applicable codes and regulations (Appendix B).

Source Tracing

- Under the interagency agreement between Ecology and SPU, a total of three in-line solids samples (MH211, MH220, MH221) and two catch basin samples (CB202, CB205) were collected in the S River Street SD during March through May 2009. Detected

concentrations above storm drain screening values are summarized below. Complete sample results are presented in Appendix E; sample locations are shown in Figure 5.

Chemical*	CB202 5/20/09	CB205 5/27/09	MH211 3/12/09	MH220 5/20/09	MH221 5/20/09
Arsenic			96		
Copper			470		
Zinc	413		1,010	790	552
Fluoranthene			2.0		
BEHP	2.8	7.4	5.8	1.6	2.2
BBP	0.15	0.17		1.3	0.14
Diethylphthalate	0.12				
Dimethylphthalate		0.16			
PCBs, total				0.37	0.20
TPH-Diesel			5,100		
TPH-Oil	2,800	4,700	9,300	2,800	2,500

*All concentrations in mg/kg DW

- Also under the interagency agreement between Ecology and SPU, seven in-line sediment samples (MH204, MH205, MH222, MH223, MH224, MH225, and MH226) and two catch basin samples (RCB211, RCB212) were collected in the S Brighton Street CSO/SD basin during January and May 2009. Detected concentrations above storm drain screening levels are summarized below. Complete sample results are presented in Appendix E; sample locations are shown in Figure 5.

Chemical*	MH204 1/15/09	MH205 1/15/09	MH222 5/21/09	MH223 5/21/09	MH224 5/21/09	MH225 5/21/09	MH226 5/26/09	MH227 5/26/90	RCB211 5/26/09	RCB212 5/26/09
Arsenic		125		1,420			58	1,270		
Copper				831				848		
Lead				977		473	757	957		
Mercury					0.46	1.15	3.41			
Zinc	586	710		4,000	959	709	905	3,600	938	949
Fluoranthene										2.4
BEHP	2.2	2.3				5.0			24	38
BBP	0.4	0.11							3.0	5.0
Dimethyl-phthalate	0.079									
PCBs, total		0.148				0.78	0.35		0.47	0.60
N-Nitroso-diphenylamine				0.036						
Benzyl alcohol		0.11								
TPH-Diesel						21,000			3,000	4,800
TPH-Oil						30,000	4,900		13,000	20,000

*All concentrations in mg/kg DW

5.6.1 Fox Avenue Building/Cascade Columbia Distribution

Current Operations	Chemical distribution facility
Historical Operations	Chain manufacturing
Address	6900 Fox Avenue S
Facility/Site ID	2282 (Fox Avenue Building)
Chemicals of Concern	Halogenated organic compounds, petroleum products, non-halogenated solvents, PAHs
Media Affected	Groundwater, soil

Source Control Actions

- Ecology negotiated a new Agreed Order with Fox Avenue Building LLC, the current owner of the Cascade Columbia Distribution facility, in early 2009. The Agreed Order requires Fox Avenue Building LLC to implement an interim cleanup action, conduct a source area silts data gap investigation, collect vapor samples to find whether PCE vapors from the subsurface are reaching the office portion of the facility at concentrations of concern, conduct a supplemental evaluation of remediation alternatives, prepare and submit a Supplemental FS, and prepare and submit a draft Cleanup Action Plan. The Agreed Order was signed by Fox Avenue Building LLC in May 2009 (Ecology 2009g).
- According to an April 2009 letter from Ecology to Mr. John Houlihan published in the May 2009 Responsiveness Summary (Ecology 2009f), the ERD pilot test has been removed and Ecology is continuing to work with Fox Avenue Building to develop cleanup alternatives. The draft FS is scheduled to be completed in August 2009 and the draft Cleanup Action Plan is scheduled to be completed in November 2009 (Ecology 2009d).

Table 15. Source Control Action Items – RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
S Brighton Street CSO/SD	Conduct in-line storm drain sampling to evaluate whether COCs are to the LDW via the S Brighton Street CSO/SD.	High	SCAP	SPU	Complete	--	June 2009	Metals (arsenic, copper, lead, mercury, zinc), phthalates (BEHP, BBP, dimethylphthalate), PCBs, and other chemicals detected at levels of potential concern in catch basin and in-line storm drain sediment samples.
	Conduct source tracing in the S Brighton Street CSO/SD basin.	High	Follow-On	SPU, Ecology	Planned	2010		
	Locate and review VCP files pertaining to four former facilities at South Seattle Community College (Arrow Transportation, Inland Transportation Company, Ben's Truck Repair, and Hat n' Boots Gas Station). Investigate the South Seattle Community College property to determine what cleanup actions may have been conducted during development, and whether potential sources of sediment recontamination may remain onsite from the four former facilities.	Medium	SCAP	Ecology	Planned	2010		
S River Street SD	Conduct in-line storm drain sampling to evaluate whether COCs are migrating to the LDW via the S River Street SD.	High	SCAP	SPU	Complete	--	June 2009	Metals (arsenic, copper, zinc), phthalates (BEHP, BBP, diethylphthalate, dimethylphthalate), PCBs, and other chemicals detected at levels of concern in catch basin and in-line storm drain sediment samples.
	Conduct source tracing in the S River Street SD basin	High	Follow-On	SPU, Ecology	Planned	2010		
SCS Refrigerated Services	Review the PRP response to EPA's CERCLA 104(e) letters sent to SCS Holding LLC and SCS Refrigerated Services LLC in March 2008.	Low	SCAP	Ecology	Planned	June 2010		Identify additional source control actions as needed.
	Conduct a source control inspection to assess whether recommendations from the May 2007 inspection have been addressed, confirm whether the facility discharges to the LDW through Outfall #2024, and determine the discharge point of storm drain lines along the northern and western edges of the facility.	High	SCAP	SPU	Complete	--	May 2009	Initial inspection on 3/6/09; follow-up inspection on 5/22/09 found facility in compliance with stormwater regulations/code.
Seattle Distribution Center	Review the PRP response to EPA's CERCLA 104(e) letter sent to CLPF Seattle Distribution in March 2008.	Low	SCAP	Ecology	Planned	June 2010		Identify additional source control actions as needed.

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Conduct a source control inspection to determine whether the facility needs an NPDES permit, and confirm the presence of discharge points to the LDW including Outfall #2025 and an additional private storm drain line.	High	SCAP	SPU, Ecology	In Progress	August 2009		Inspections conducted 3/18/09, 5/22/09, and 6/4/09; corrective actions in progress. Continue inspections until compliance is achieved.
Glacier Marine Services	Review responses to EPA's CERCLA 104(e) Request for Information letters sent to Northland Services, Inc., Fox Avenue LLC, Seatac Marine Properties, Evergreen Marine Leasing, and Fox Avenue Warehouse in 2008.	Low	SCAP	Ecology	Planned	September 2010		
	Conduct a source control inspection to clarify issues related to storm drain system configuration and location of outfalls, sanitary sewer connections, and current activities at the facility as identified in the SCAP; conduct storm drain sampling as needed.	High	SCAP	SPU, Ecology	Planned	September 2010		
	Conduct in-line storm drain sampling to evaluate whether COCs are migrating to LDW sediments via the Glacier Marine Services storm drain system.	High	SCAP	SPU, Ecology	Planned	September 2009		
V. Van Dyke	Review responses to EPA's Request for Information 104(e) Letter sent to V. Van Dyke, Inc. in March 2008	Low	SCAP	Ecology	Planned	October 2010		
	Determine whether a UST may have been removed from the property without a proper closure.	Medium	SCAP	Ecology	Planned	October 2009		
	Conduct a source control inspection to verify compliance with applicable regulations/codes.	High	SCAP	SPU, Ecology	Complete	--	May 2009	SPU inspections conducted on March 19 and May 5, 2009. Facility in compliance with applicable codes and regulations.
	Locate and review additional reports related to V. Van Dyke property that are missing from Ecology's files.	Medium	SCAP	Ecology	Planned	October 2011		
	Work with V. Van Dyke to complete quarterly groundwater or other monitoring suggested by Adapt, if needed.	Medium	SCAP	Ecology	Planned	October 2013		
Riverside Industrial Park	Review responses to EPA's Request for Information 104(e) Letter sent to Riverside Industrial Park and Big John's Truck Repair in 2008.	Low	SCAP	Ecology	Planned	October 2010		
	Conduct a source control inspection to address the two former shop building floor drains, determine if storm drain lines between the shop building and office building pass through areas where contaminated soil has been excavated, and conduct in-line storm drain sampling.	High	SCAP	Ecology, SPU	Planned	October 2009		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Determine the status of cleanup at the facility and whether to pursue additional investigation and cleanup under an administrative order.	Medium	SCAP	Ecology	Planned	November 2009		
Schultz Distributing	Conduct a source control inspection to verify compliance with applicable regulations/codes, determine whether storm drain lines pass through the area of chlorinated solvent groundwater contamination near the tank farm, determine whether the storm drains discharge to the S Brighton Street CSO SD, and confirm that the pump was removed from the oil/water separator.	High	SCAP	SPU, Ecology	Planned	November 2009		
	Conduct in-line storm drain sampling to evaluate whether COCs are migrating to LDW sediments via the Shultz Distributing storm drain system.	High	SCAP	SPU, Ecology	Planned	November 2009		
	Review AGI's results and conclusions and determine whether additional investigations should be conducted.	Medium	SCAP	Ecology	Planned	November 2009		
Cascade Columbia Distribution/Fox Avenue Building	Review responses to EPA's CERCLA 104(e) letter sent to Great Western Chemical Company in July 2008.	Low	SCAP	Ecology	Planned	November 2010		Action item also included in RM 2.3-2.8 East SCAP for Fox Avenue Building.
	Coordinate any source control to be implemented at Cascade Columbia Distribution with the work that is to be conducted under the new 2009 Agreed Order.	Medium	SCAP	Ecology	Planned	TBD		
	Verify that the source of the "NW Corner Plume" will be investigated under the new Agreed Order.	Medium	SCAP	Ecology	Planned	November 2009		
Bunge Foods/Dawn Food Products/ Guimont Parcel	Review responses to EPA's CERCLA 104(e) letter sent to Bunge Foods Processing LLC in July 2008.	Medium	SCAP	Ecology	Planned	November 2009	NA	Action item also included in RM 2.3-2.8 East SCAP for Guimont Parcel/Dawn Food Products/Former Bunge Foods.
Muckleshoot Seafood Products	Review responses to EPA's CERCLA 104(e) letter sent to Silver Bay Logging in March 2008.	Medium	SCAP	Ecology	Planned	November 2009		Identify additional source control actions as needed.
Rainier Petroleum	Review responses to EPA's CERCLA 104(e) letter sent to Rainier Petroleum Corporation in July 2008.	Medium	SCAP	Ecology	Planned	November 2009		Identify additional source control actions as needed.
Morton Marine Equipment	Review responses to EPA's CERCLA 104(e) letter sent to Morton Marine Equipment in March 2008.	Medium	SCAP	Ecology	Planned	November 2009		
R.A. Barnes	Conduct additional investigations as needed to determine facility location and potential for sediment recontamination.	Medium	SCAP	Ecology	Planned	November 2009		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the RM 2.0-2.3 East SCAP
Follow-On	Action item is a follow-on to an action item identified in the RM 2.0-2.3 East SCAP

5.7 RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)

RM 2.8-2.8 East (Seattle Boiler Works to Slip 4) and relevant adjacent and upland properties are shown in Figure 21. Source control action items are listed in Table 16.

Location	RM 2.3-2.8 East
Chemicals of Concern	Mercury, PCBs, PAHs, dioxins/furans, organo-tin compounds
Data Gaps Evaluation	May 2008 (SAIC 2008a)
SCAP	June 2009 (Ecology 2009j)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below. Source control actions for Crowley Marine Services (which is located partially within EAA-3 and partially within RM 2.3-2.8 East) are included in Section 3.4.1.

Source Control Actions

- A SCAP for this source control area was completed and published in June 2009 (Ecology 2009j). The SCAP identified two public outfalls (S Myrtle Street and S Garden Street) located within the RM 2.3-2.8 East source control area.

  Six properties located adjacent to the LDW were identified as potential sources of contaminants to waterway sediments: Guimont Parcel (Dawn Food Products/former Bunge Foods), Seattle Boiler Works, Seattle Iron & Metals, Puget Sound Truck Lines/Phil's Finishing Touch, the Seattle City Light Georgetown Pump Station, and a portion of the Crowley Marine Services Property (currently occupied by Alaska Logistics).

  Several upland properties were also identified as potential contaminant sources to the LDW, including Fox Avenue Building/Fox Avenue Building #2 (Cascade Columbia Distribution/former Great Western Chemical Company), Whitehead Company/former Tyee Industries, Whitehead Company/former Perkins Lot (Svendsen Brothers Fish Company), the former Trim Systems parcel, the Nitze-Stagen/Frye parcels, and the former Sternoff parcel (CleanScapes).

Inspections

- During the period of September 2008 through June 2009, SPU conducted initial and/or follow-up inspections at Dawn Food Products, Svendsen Brothers Fish Company, and Taxi King. Corrective actions that were identified during the inspections have been completed, and these facilities were identified by SPU as in compliance with applicable codes and regulations (Appendix B). Inspections conducted at Seattle Iron & Metals and CleanScapes identified corrective actions that have not yet been implemented. Additional information is provided in Sections 5.7.1 and 5.7.4 below.

- At the time of the most recent inspection (September 17, 2008), Svendsen Brothers Fish Company was in the process of obtaining NPDES and KCIW discharge permits (SPU 2008).
- On February 5, 2009, Ecology conducted an inspection at Dawn Food Products. The inspector determined that the facility needs to apply for an Industrial Stormwater General Permit or a Certificate of No Exposure (Jeffers 2009a).

Source Tracing

- Under the interagency agreement between Ecology and SPU, one in-line solids sample (MH240) and one catch basin samples (CB207) were collected in the S Garden Street SD during June 2009. In addition, SPU had collected a sample in the S Garden Street SD basin along the south side of the Seattle Iron & Metals facility (RCB146) in September 2008 (Robinson 2009a). Detected concentrations above storm drain screening values are summarized below. Complete sample results are presented in Appendix E for the interagency agreement samples; sample locations are shown in Figure 5. Complete sample results for RCB146 are presented in (Robinson 2009a).

Chemical*	CB207 6/3/09	MH240 6/3/09	RCB146 9/12/08
Arsenic	60		
Copper	7,990	2,200	1,020
Lead	2,240	1,710	670
Mercury	2.82	4.29	1.08
Zinc	13,300	8,960	2,900
Acenaphthene		1.8	
Anthracene		3.2	
Fluorene		4.6	1.8
Naphthalene		4.1	
Phenanthrene	2.1	16.0	
Benzo(a)anthracene		5.1	0.45
Benzo(a)pyrene		4.0	
Benzo(b)fluoranthene		4.1	
Benzo(k)fluoranthene		4.1	
Chrysene	1.8	7.3	
Fluoranthene	3.7	16.0	
Pyrene		15.0	
BEHP	62	210	47
BBP	6.0	12.0	2.1
Dimethylphthalate	1.4	4.2	0.36
Di-n-butyl phthalate	2.3	2.6	
Di-n-octyl phthalate		23.0	
PCBs, total	18.3	25.0	2.56
TPH-Diesel	5,200	17,000	

TPH-Oil	15,000	60,000	

*All concentrations in mg/kg DW

- In September 2008, SPU collected solids samples from two right-of-way catch basins (RCB147, RCB148) and one manhole (MH100) in the S Myrtle Street storm drain basin (Robinson 2009a). Sampling locations are shown in Figure 4. Catch basins RCB147 and RCB148 are located adjacent to the Seattle Iron & Metals facility and drain to the S Myrtle Street outfall. MH100 is located near the S Myrtle Street outfall. Detected concentrations above storm drain screening levels are summarized below. Complete sample results are presented in (Robinson 2009a).

Chemical*	RCB147 9/12/08	RCB148 9/12/08	MH100 9/12/08
Copper			500
Lead		467	675
Mercury	0.97	0.74	1.88
Zinc	1,540	1,950	2,420
Phenanthrene		2.6	
Chrysene		1.5	
Fluoranthene		3.0	
Pyrene		3.4	
BEHP	35	36	3.0
BBP	1.9	4.4	1.5
Diethylphthalate		0.36	
Dimethylphthalate		0.23	0.2
Phenol	0.85	0.89	
4-Methylphenol	18.0	2.6	
PCBs, total	0.69	3.7	1.55
TPH-Diesel	4,300	2,800	
TPH-Oil	11,000	10,000	5,100

*All concentrations in mg/kg DW

- Information on source tracing near the former Sternoff parcel (currently CleanScapes/CDL Recycle) is provided in Section 5.7.4 below.

5.7.1 Seattle Iron & Metals

Current Operations	Metals recycling
Historical Operations	Dangerous waste transport, construction, machine shop
Address	601 S Myrtle Street, Seattle 98108
Facility/Site ID	94727791 (Seattle Iron Metals Corp)
Chemicals of Concern	Metals (copper, zinc), petroleum hydrocarbons
Media Affected	Soil, groundwater, stormwater

Source Control Actions

- A catch basin solids sample collected by SPU in September 2008 from catch basin RCB148, located adjacent to the Seattle Iron & Metals facility along S Myrtle Street, contained 4-methylphenol, BEHP, BBP, lead, mercury, PCBs, phenol, and zinc at concentrations above the storm drain screening values. In addition, a grab sample from maintenance hole MH-100, near the S Myrtle Street outfall, contained BBP, copper, lead, mercury, PCBs, and zinc at concentrations above the SQS. Catch basin RCB146 is located on the south side of the Seattle Iron & Metals facility; it drains to the S Garden Street outfall. The solids sample collected from this catch basin contained BEHP, BBP, copper, lead, mercury, zinc, and PCBs (primarily Aroclor 1248 and 1254) at concentrations above the SQS.
- In November 2008, Ecology issued Follow-up Order No. 6185, requiring Seattle Iron & Metals to take corrective actions to prevent further violations of its NPDES permit (Ecology 2008g). Between December 1, 2007, and June 30, 2008, Seattle Iron & Metals had violated TPH, zinc, lead, copper, and turbidity discharge limitations of their Waste Discharge Permit (No. WA-003196-8). In addition, the facility had processed and discharged about 22,000 gallons of wastewater to the LDW on July 21, 2008.
- The Order requires Seattle Iron & Metals to evaluate the adequacy and appropriateness of the existing Dissolved Air Flotation and Filtration treatment unit and submit an engineering report to Ecology for review and approval. In addition, Seattle Iron & Metals is required to evaluate, through a comprehensive engineering report, the drainage, topology, and hydrology of their site to identify the quantity of potentially contaminated stormwater runoff and the potential discharge to the receiving water. According to the Order, all reports will be completed by July 30, 2009 (Ecology 2008g).
- SPU conducted a source control inspection at this property on January 30, 2009 (Appendix B). The following corrective actions were identified: improve or create spill response procedures; implement proper housekeeping; properly store containerized materials; and properly store non-containerized materials. A follow-up inspection is needed.

5.7.2 Crowley Marine Services

Current Operations	Cargo container storage, berthing facility, railroad operations
Historical Operations	Hydraulic parts manufacturing, lumber mill, pole-dipping, excelsior (wood packing material) manufacturing
Address	7400-8th Avenue S, Seattle 98108
Facility/Site ID	1940187 (Crowley Marine Services Inc. 8th Avenue S) 63123962 (Alaska Logistics LLC)
Chemicals of Concern	Arsenic, copper, PAHs, PCBs, phthalates, petroleum hydrocarbons
Media Affected	Sediment, soil, groundwater

This property is also included in the EAA-3 (Slip 4) source control area. More detailed information regarding activities at the Crowley Marine Services property is presented in Section

4.3.1. Source control activities related to areas of the property with stormwater drainage directly to the LDW (rather than Slip 4) are presented below.

Source Control Actions

- This property is bordered by a seawall constructed from interlocking sheets of steel plate. Boulder riprap is piled along the wall. During a bank survey along the Crowley Marine Services property performed by SLR International in July 2008, a 1-inch long crack and ¾-inch diameter hole were observed along a weld in the sheet piling (SLR 2008). In September 2008, Crowley plugged the crack and hole by welding a steel plate over the area (SLR 2009).

5.7.3 Seattle City Light – Georgetown Pump Station

Current Operations	Vacant
Historical Operations	Pump station for GTSP
Address	7551 8th Avenue S
Facility/Site ID	None
Chemicals of Concern	Petroleum hydrocarbons, cadmium, chromium
Media Affected	Soil

Source Control Actions

- The SCAP for RM 2.3-2.8 East identified a 4-inch diameter concrete pipe, previously listed as Outfall 2041, as the old water intake for the GTSP. In addition, the SCAP described a drainage ditch or pipe that extends to the northwest shoreline of the property, as shown in a 2006 property plan (Ecology 2009j). Recent information from SPU indicates that Outfall 2041 was mistakenly identified as the former GTSP intake, and is in fact an outfall that enters the LDW on the upstream side of the Seattle City Light - Georgetown Pump Station property. Outfall 2041 may be the outfall that was shown on the 2006 property plan referenced in the SCAP.

5.7.4 CleanScapes/Former Sternoff Metals Property

Current Operations	Construction, demolition, and land-clearing debris recycling
Historical Operations	Scrap metal salvage, truck and container storage, thermal soil treatment
Address	7201 East Marginal Way S; 7308 8th Avenue S
Facility/Site ID	2057
Chemicals of Concern	PCBs, metals (mercury, chromium, copper, lead), VOCs, PAHs, TPH
Media Affected	Soil, groundwater

This property is also referred to as CDL Recycle.

Source Control Actions

- In November 2008, the Georgetown Community Council collected soil samples from the right-of-way along 8th Avenue S near the CleanScapes (former Sternoff Metals) and Markey Machinery properties, to support the creation of drainage swales that would allow 8th Avenue S to be paved (Dorigan 2008). Sample results are listed below (Simson 2008a), and sampling locations are shown in (Simson 2008b). Lead, arsenic, and PCB concentrations exceeded MTCA Method A and B soil cleanup levels.

Sample Location:	Debris Pile at south end of CleanScapes property	Near CleanScapes north gate, 0–12 inches bgs	Near CleanScapes south gate, 12–18 inches bgs	Near front of Markey Machinery, 0–12 inches bgs
Chemical	**Concentration (mg/kg DW)**			
PCBs, total	4.9	4.4	5.9	0.33
Arsenic	7.0	60	60	8.0
Lead	309	2,160	4,730	346
Diesel	55	330	200	160
Motor Oil	280	590	620	570

- SPU (with Ecology funding) collected soil/solids samples from six locations near the CleanScapes/Former Sternoff Metals property on May 27, 2009 (Schmoyer 2009b). Samples were analyzed for PCBs, metals (arsenic, copper, mercury, lead, zinc), SVOCs, TOC, TPH-diesel, and grain size. Results for PCBs, copper, lead, and mercury are listed below:

Sample Location:	Catch Basin at driveway entrance (8th Avenue S)	Surface dirt sample at obvious ponding area at driveway entrance	Composite from soil pile in back corner of property	Surface dirt composite from yard area behind building	Composite from soil pile behind building	Surface dirt composite from driveway entrance (8th Avenue S, across from Cleanscapes site)
Chemical	**Concentration (mg/kg DW)**					
PCBs, total	3.6	6.9	1.34	0.53	0.06	0.18
Copper	668	876	487	224	83.2	62.8
Lead	1,180	1,480	71	400	155	52
Mercury	0.98	1.13	0.15	0.41	0.23	0.03

- On June 16, 2009, Ecology conducted an Urban Waters inspection at CleanScapes (address listed as 7303 8th Avenue S). Numerous corrective actions were identified, including: Stormwater Pollution Prevention Plan not complete; improper storage of universal waste lamps; grease contamination of storm drains; need to obtain moderate risk waste permit for collection and storage of used oil; need to obtain authorization for steam clean discharge to sanitary sewer; need to post spill plans in high risk areas; and

need to improve housekeeping by sweeping lot, preventing vehicle oil leaks, and spill cleanup (Jeffers 2009b). A follow-up inspection is needed.

- On June 30, 2009, SPU conducted an inspection at CDL Recycle, LLC (address listed as 7201 East Marginal Way S). This is believed to be the same facility inspected by Ecology on June 16. The inspector identified two corrective actions needed at this property: storm drain facility needs to be cleaned; and implement proper housekeeping. A follow-up inspection is needed (Appendix B).

Table 16. Source Control Action Items – RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
SPU Storm Drains and Outfalls	Collect additional solids samples from catch basins and maintenance holes in city-owned storm drains as needed to evaluate concentrations of COCs in the drainage basin.	High	SCAP	SPU	Complete	--	June 2009	Two samples collected from S Garden Street SD in June 2009 contained metals, PCBs, phthalates, PAHs, and TPH present at levels of concern. Samples collected in September 2008 in S Myrtle Street SD also contained elevated concentrations of metals, PAHs, phthalates, phenols, and PCBs.
	Conduct source tracing to identify potential contaminant sources to stormwater discharging to the LDW through the S Myrtle Street and S Garden Street outfalls.	High	SCAP	SPU	Planned	December 2009		
Guimont Parcel (Dawn Foods/former Bunge Foods)	Review responses to EPA's Request for Information 104(e) letters sent to William P. Guimont, Fox Avenue Warehouse Corporation, Bunge Foods Processing LLC, and Dawn Food Products, Inc.	High	SCAP	Ecology	Planned	September 2009		
Seattle Boiler Works, Inc.	Review responses to EPA's Request for Information 104(e) letters sent to Fred Hopkins/Seattle Boiler Works, Inc., Frank H. Hopkins Family LLC, and National Steel Construction Company, and identify additional data gaps/source control action items as needed.	High	SCAP	Ecology	Planned	September 2009		
	Conduct follow-up inspections to the June 2007 stormwater compliance inspection as needed to verify that deficiencies noted during the inspection have been corrected. Obtain an updated facility plan showing the locations of all catch basins, maintenance holes, storm drain lines, stormwater conveyance lines, and outfalls and field verify the locations of these drainage system features.	High	SCAP	Ecology	Planned	August 2009		
	Determine if the five outfalls that are not included in Seattle Boiler Work's NPDES permit are in use. If in use and Seattle Boiler Works is the source of discharge, modify the facility's stormwater permit to include these outfalls.	High	SCAP	Ecology	Planned	December 2009		
	If Seattle Boiler Works is not the source of discharges to these five outfalls, perform source tracing to identify potential sources discharging to the outfalls.	High	SCAP	Ecology/SPU	Planned	December 2009		
Seattle Iron & Metals Corporation	Review responses to EPA's Request for Information 104(e) Letter sent to Seattle Iron & Metals, Manson Construction Company, Othello Street Warehouse Corporation, and The Maust Corporation in July 2008.	High	SCAP	Ecology	Planned	September 2009		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Locate and review Hart Crowser's 1998 Voluntary Cleanup Action Report, 606 South Myrtle Street, to evaluate the extent of soil and groundwater sampling that has been conducted at this property, identify any sediment COCs, and evaluate the potential pathways for sediment recontamination.	Medium	SCAP	Ecology	Planned	October 2009		
	Obtain records from the soil removal and remediation performed by U.S. SeaCon and determine if the action was the Independent Remedial Action that was performed prior to 1998 or an additional remedial action performed at the property. Determine if additional sampling is needed to characterize site for sediment COCs.	Medium	SCAP	Ecology	Planned	October 2009		
	Monitor compliance with Ecology Follow-Up Order No. 6185.	High	SCAP	Ecology	In Progress	October 2009		
	Investigate means to determine if ASR is reaching the LDW directly or via the Seattle Iron & Metals or Seattle Boiler Works storm drain systems.	Medium	SCAP	Ecology	Planned	December 2009		
	Obtain information documenting the status of the furnace to determine if it was relocated from the Harbor Island facility to Seattle Iron & Metals' current facility. Current furnace operations, if any, will be identified.	Medium	SCAP	Ecology/PSCAA	Planned	October 2009		
	Request information from the facility operator regarding the source of discharge, if any, to Outfall 2034, observed along the Seattle Iron & Metals shoreline during SPU's outfall survey.	High	SCAP	Ecology	Planned	October 2009		
Puget Sound Truck Lines	Review responses to EPA's Request for Information 104(e) letters sent to Puget Sound Truck Lines and R&A Properties LLC.	High	SCAP	Ecology	Planned	December 2009		
	Review records of soil cleanup activities completed in 1995 to verify that groundwater discharge from this property is not a potential sediment recontamination source.	Medium	SCAP	Ecology	Planned	October 2009		
	Perform a follow-up stormwater compliance inspection to determine whether catch basins are cleaned regularly and if housekeeping has improved. Obtain a facility plan that shows the locations of all catch basins and storm drain lines at the facility.	Medium	SCAP	Ecology	Planned	October 2009		
	Determine whether the five outfalls identified at the property are active, and identify the source of discharge from these outfalls, if any.	High	SCAP	Ecology, Property owner/operator	Planned	October 2009.		
Seattle City Light Georgetown Pump Station	Determine if the drainage ditch/pipe is active and if it discharges to the LDW. If active, determine the area drained by the drainage ditch/pipe and determine the potential for sediment COCs to reach the LDW.	High	SCAP	Ecology, SPU	Planned	2010		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Obtain and review information about any groundwater sampling that has been conducted at this property. Based on this review, evaluate the need for further source control actions.	Medium	SCAP	Ecology	Planned	December 2009		
Crowley Marine Services	In conjunction with an Agreed Order for the Crowley Marine Services site, perform additional investigations that include collection of data on chemical concentrations in soil and groundwater at the western and southern portions of the property.	High	SCAP	Crowley Marine Services	Planned	2010		
	Review information submitted to EPA in response to the Request for Information 104(e) letters sent to Crowley Marine Services, Samson Tug and Barge Company, Northland Services, and Evergreen Marine Leasing.	High	SCAP	Ecology	Planned	August 2009		
	Conduct facility inspections for current tenants at the Crowley Marine Services property to determine if operations could be a source of LDW sediment recontamination.	Medium	SCAP	Ecology, SPU	Planned	July 2009		
	Require the owner and/or tenants to obtain an NPDES permit if facility inspections conclude that business operations require a stormwater discharge permit.	Medium	SCAP	Ecology	Planned	August 2009		
	Collect stormwater and/or solids samples from storm drain system to determine if onsite system is source of COCs found in waterway sediment.	High	SCAP	Ecology	Planned	August 2009		
	Review the Environmental Investigation Report, Crowley Marine Services Site, dated August 1, 2008 (prepared by SLR International Corp), and identify remaining data gaps and source control actions for the property.	High	SCAP	Ecology	In Progress	TBD		
Fox Avenue Building and Fox Avenue Building #2/Former Great Western Chemical Company	Monitor the progress of the RI/FS to investigate and remediate soil and groundwater contamination beneath the property.	Medium	SCAP	Ecology	Planned	TBD		
	Review responses to EPA's July 2008 Request for Information 104(e) letter sent to Great Western Chemical Company, including evaluation of the presence and/or potential for generation of dioxin associated with former activities at the property.	Low	SCAP	Ecology	Planned	November 2010		
Whitehead Company, Inc./Former Tyee Industries	Require the property owner/operator to address the pentachlorophenol contamination in groundwater discovered by Cascade Columbia Distributions' contractor.	Medium	SCAP	Ecology	Planned	December 2009		
	Perform a business inspection to identify current operations at this property, and to evaluate whether operations could be an ongoing source of contaminants to LDW sediments.	Medium	SCAP	Ecology, SPU	Planned	December 2009		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Whitehead Company, Inc./Former Perkins Lot	Conduct facility inspection to determine if activities conducted by businesses at this location require an NPDES permit, and to ensure compliance with applicable codes and regulations.	Medium	SCAP	Ecology, KCIW	In Progress	July 2009		
	Assist Svendsen Brothers with obtaining coverage under the Industrial Stormwater General Permit and KCIW discharge authorization or permit.	Medium	SCAP	Ecology, KCIW	In Progress	July 2009		
	Perform a follow-up inspection at Taxi King to ensure that corrective actions identified in July 2008 have been implemented.	Medium	SCAP	Ecology, SPU	Complete	--	September 2008	Follow-up inspection conducted 9/19/08; facility in compliance with applicable codes and regulations at that time.
	Obtain a list of previous tenants from the property owner to evaluate historical operations and to determine if these operations could have resulted in soil or groundwater contamination.	Medium	SCAP	Ecology, Property owner/operator	Planned	December 2009		
Former Trim Systems	Inspect site to ensure that operations at the facility are in compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW. Obtain a facility plan showing the locations of all catch basins and storm drains (if any).	Medium	SCAP	Ecology, SPU	Planned	December 2009		
	Review responses to EPA's July, 2008 Request for Information 104(e) letters sent to Seattle Iron & Metals, Manson Construction, and Northwest Container Services.	High	SCAP	Ecology	Planned	December 2009		
Nitze-Stagen/Frye Parcels	Inspect site to ensure that operations at Pioneer Distribution are in compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW. Obtain facility plans showing the locations of all catch basins and storm drain lines (if any). Require property owner to obtain NPDES permit, as necessary.	Medium	SCAP	Ecology, SPU	Planned	December 2009		
	Review responses to EPA's Request for Information 104(e) letters sent to Nitze-Stagen and Pioneer Human Services.	High	SCAP	Ecology	Planned	December 2009		
Former Sternoff Parcel	Evaluate the need for additional soil and groundwater samples and analyze them for sediment COCs to determine the potential for sediment recontamination via the groundwater discharge pathway.	Medium	SCAP	Ecology	Planned	December 2009		
	Locate documentation verifying that a PCB-contaminated "trash pile" and approximately 52,187 pounds of contaminated soil have been removed from the property.	Medium	SCAP	Ecology	Planned	December 2009		
	Determine the disposition of petroleum-contaminated soil stockpiled at the property by Remedco and provide the documentation to Ecology.	Low	SCAP	Ecology	Planned	December 2009		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Inspect facility to confirm that stormwater does not drain to the LDW and ensure that operations are in compliance with applicable codes and regulations.	Medium	SCAP	Ecology, SPU	Planned	August 2009		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the RM 2.3-2.8 East SCAP

5.8 RM 3.9-4.3 East (Slip 6)

RM 3.9-4.3 East (Slip 6) and relevant adjacent and upland properties are shown in Figure 22. Source control action items are listed in Table 17.

Location	RM 3.9-4.4 East
Chemicals of Concern	Metals, PCBs, PAHs, phthalates, VOCs, petroleum hydrocarbons
Data Gaps Evaluation	February 2008 (E&E 2008a)
SCAP	September 2008 (Ecology 2008d)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Area-Wide Source Control Actions

- A SCAP for this source control area was completed and published in September 2008. Potential sources of contaminants to sediments in Slip 6 include a 36-inch King County storm drain outfall, the 8801 (former Kenworth Truck/PACCAR) Site, the former Rhone-Poulenc site, a portion of KCIA known as Drainage Area 3, the Museum of Flight, and a portion of the Boeing Developmental Center (BDC) (Ecology 2008d).

5.8.1 8801 Site (Former Kenworth Truck/PACCAR)

Current Operations	Damaged vehicle storage
Historical Operations	Truck manufacturing; airplane assembly
Address	8801 East Marginal Way S, Tukwila
Facility/Site ID	2072 (Kenworth Truck Co)
Chemicals of Concern	Petroleum hydrocarbons, PAHs, VOCs, PCBs, metals (arsenic, lead, copper), SVOCs
Media Affected	Soil, groundwater, stormwater, sediment

Source Control Actions

- Ecology, PACCAR, and Merrill Creek Holdings (the current property owner) have signed an Agreed Order for upland cleanup, which includes completion of an RI/FS and Interim Action Work Plan; the Order became effective on November 14, 2008.
- Preliminary sediment core results from Phase 2 sediment sampling (completed in February 2008) show PCBs, BBP, and metals above SMS criteria. Ecology and EPA have evaluated the sediment results and have agreed that there are sufficient data to show that a sediment cleanup will be needed. No additional sediment sampling will be requested at this time. The PLP submitted a revised Sediment Evaluation Data Report in January 2009; Ecology provided comments and a final draft was submitted in June 2009 (Ecology 2009h, 2009o]. Ecology is currently reviewing this report.

- Ecology has reviewed an Interim Action Work Plan and provided comments on the RI portion. Ecology documented deficiencies that need to be addressed in a revised RI before it can approve a data gaps or supplemental investigation plan (Ecology 2009o). The revised portions of the RI are expected by Fall 2009, and the data gaps/supplemental investigation plan will be submitted in early 2010.
- Groundwater may still be entering the stormwater system at Catch Basin 74, causing continuous flow and potential contaminant discharge to the LDW (Ecology 2009h). PACCAR sealed the catch basin to prevent this flow; however, flow continues to be observed from the outfall. Ecology asked Insurance Auto Auctions, Inc. (IAAI) to take corrective action to control potential releases from the site and to identify sources. IAAI submitted a draft plan on May 15, 2009 to replace Catch Basin 74 and to monitor other catch basins on the site. Ecology provided comments on the plan. Ecology received the project specifications for the replacement of Catch Basin 74 on June 23 (Ecology 2009o).

5.8.2 King County International Airport

Current Operations	General aviation airport and related activities
Historical Operations	Military airport operations; general aviation
Address	7277 Perimeter Road S (main terminal); various tenant addresses
Facility/Site ID	NA
Chemicals of Concern	PAHs, phthalates, copper, zinc, petroleum hydrocarbons, PCBs
Media Affected	Stormwater, groundwater

Source Control Actions

- In September 2008, SPU installed an in-line sediment trap at the KCIA discharge point manhole that discharges to Slip 6. A sediment trap sample was collected on March 26, 2009. Zinc (559 mg/kg DW), PAHs (to 7.3 mg/kg DW), and BEHP (3.7 mg/kg DW) were detected at concentrations above storm drain screening levels (Appendix E). PCBs were detected at 0.057 mg/kg DW.
- An in-line solids sample was collected from this location at the same time. Zinc (1,170 mg/kg DW) was the only contaminant detected at a concentration above the screening levels (Appendix E).

Table 17. Source Control Action Items – RM 3.9-4.3 East (Slip 6)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
King County Stormwater Outfall	Collect in-line water and storm drain solids samples to evaluate if COCs are migrating to Slip 6 source control area sediments via the storm drain outfall.	High	SCAP	King County	Planned	TBD		
	Conduct source tracing to identify sources of COCs to the storm drain line, as necessary.	High	SCAP	King County	Planned	TBD		
8801 Site (Former PACCAR Site)	Negotiate an Agreed Order to address upland cleanup and source control of soil and groundwater contamination at the site.	High	SCAP	Ecology, PACCAR, Merrill Creek	Complete	--	November 2008	
	Re-evaluate existing soil and groundwater data and compare to site-specific screening levels (to be developed) for metals, PAHs, petroleum hydrocarbons, PCBs, SVOCs, and VOCs as COCs in the LDW, and test for dioxin/furans.	High	SCAP	Ecology, PACCAR, Merrill Creek	Ongoing	2009		
	Expand investigation of the southwest storage area and northwest corner of the site to determine the extent of soil and groundwater contamination.	High	SCAP	Ecology, PACCAR, Merrill Creek	Ongoing	2008-2010		
	Complete Phase 2 of the Sediment Evaluation Work, which includes sediment core sampling in selected locations in the LDW adjacent to the site.	High	SCAP	Ecology, PACCAR	Ongoing	Fall 2008		
	Negotiate expanding the stormwater and storm drain solids monitoring to add COCs at the site. Review future monitoring results to determine if further actions are necessary.	High	SCAP	Ecology, IAAI, Merrill Creek	Ongoing	2010		
	Review the current SWPPP and Operations and Maintenance Plan. Make necessary changes and additions to prevent contaminants from potential upland sources (such as fuel leaks from damaged vehicles) from migrating to Slip 6 source control area sediments via the stormwater system.	Medium	SCAP	Ecology, IAAI, Merrill Creek	Planned	2008-2009		
Former Rhône-Poulenc Site	Address the toluene groundwater contamination in the southwest corner of the East Parcel, in accordance with the Revised East Parcel Corrective Measures Implementation Work Plan.	High	SCAP	EPA, Container Properties, Rhodia, Bayer CropScience	Ongoing	2009		
	Continue to monitor the effectiveness of the hydraulic interim control measure (HCIM), and investigate the presence of elevated copper concentrations in groundwater outside the barrier wall and the potential leak in the barrier wall.	High	SCAP	EPA, Container Properties, Rhodia, Bayer CropScience	Ongoing			
	Investigate and address shoreline bank contamination from historical site operations and releases (e.g. application of vanillin black liquor solids to the shoreline bank for weed control).	High	SCAP	EPA, Container Properties, Rhodia, Bayer CropScience	Planned	2009		
	Review the current SWPPP and Operations and Maintenance Plan. Make necessary changes and additions to prevent contaminants from potential upland sources (such as fuel leaks from damaged vehicles) from migrating to Slip 6 source control area sediments via the stormwater system.	High	SCAP	Ecology, IAAI	Planned	2008		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Oversee and inspect discharge to the King County sanitary sewer system from groundwater remediation at this site through the King County Industrial Waste (KCIW) Program.	Low	SCAP	KCIWP	Ongoing			
King County International Airport (KCIA)	Evaluate the "Drainage Area 3" portion of the KCIA stormwater system that discharges to the LDW via the King County stormwater line to determine if stormwater and/or storm drain solids monitoring is necessary.	High	SCAP	Ecology, KCIA	Planned	TBD		
	Review and modify KCIA stormwater management activities to prevent contaminants from entering the KCIA stormwater system.	Medium	SCAP	Ecology, King County, KCIA	Planned	TBD		
	Assess and modify all tenant and airport pollutant prevention measures within KCIA.	Medium	SCAP	KCIA	Ongoing			
	Determine if PCBs are present in joint caulk material within this portion of the airport and conduct a removal, if necessary.	Medium	SCAP	KCIA	Planned	TBD		
Museum of Flight (MOF)	Monitor stormwater and/or storm drain solids at MOF and former BDC properties in the vicinity of USTs and associated groundwater contamination.	High	SCAP	Ecology, MOF	Planned	TBD		
	Develop a plan to remove USTs and associated soil and groundwater contamination on the MOF property.	Medium	SCAP	Ecology, MOF	Planned	TBD		
	Identify the source and extent of groundwater contamination on the former BDC property, and conduct remedial action, as necessary.	High	SCAP	Ecology, MOF	Planned	TBD		
Boeing Developmental Center (BDC)	Conduct stormwater and/or storm drain solids monitoring for outfalls DC14 and DC15.	High	SCAP	Ecology, Boeing	Planned	TBD		
	Investigate UST locations to determine whether any USTs are located within the Slip 6 drainage basin and whether any USTs present a source of contaminants to soil and/or groundwater.	Low	SCAP	Boeing	Planned	TBD		
	Review the current SWPPP and make changes and additions necessary to prevent contaminants from entering the BDC stormwater system.	Medium	SCAP	Ecology, Boeing	Planned	TBD		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the RM 3.9-4.3 East SCAP

5.9 RM 4.3-4.9 East (Boeing Developmental Center)

No source identification or control activities have been conducted to date.

5.10 RM 0-1.0 West (Spokane Street to Kellogg Island)

No source identification or control activities have been conducted to date.

5.11 RM 1.0-1.3 West (Kellogg Island to Lafarge Cement)

No source identification or control activities have been conducted to date.

5.12 RM 1.3-1.6 West (Glacier Bay)

RM 1.3-1.6 West (Glacier Bay) and relevant adjacent and upland properties are shown in Figure 23. Action items for this source control area are listed in Table 18.

Location	RM 1.3-1.6 West
Chemicals of Concern	Metals (arsenic, mercury, zinc, copper, lead, antimony, tin), dioxins/furans, PCBs, phthalates, PAHs, 1,2-dichlorobenzene, pentachlorophenol, benzyl alcohol, organo-tin compounds
Data Gaps Evaluation	June 2007 (SAIC 2007f)
SCAP	December 2007 (Ecology 2007e)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

Source Control Actions

Business Inspections

- Ecology conducted a source control inspection at Glacier Northwest (5902 West Marginal Way SW) on May 20, 2009. The facility was in compliance with applicable codes and regulations at that time (Jeffers 2009b).

Source Tracing

- SPU installed a sediment trap (KN-ST1) at the eastern end of the SW Kenny SD (just before it discharges to Glacier Bay) on September 10, 2008, under the interagency agreement between Ecology and SPU. A sediment trap sample was collected on March 17, 2009. In addition, in-line solids samples were collected from this location on September 10, 2008, and March 17, 2009. Detected concentrations above storm drain screening levels are summarized below. Complete sample results are presented in Appendix E; sample locations are shown in Figure 5.

Chemical*	KN-ST1 Sediment Trap 3/17/09	KN-ST1G 9/10/08	KN-ST1G 3/17/09
Zinc	463	707	771
Benzo(g,h,i)perylene	0.76		
Dibenz(a,h)anthracene	0.25		
Fluoranthene	2.1		
BEHP	4.9		2.1
BBP	0.16		0.14
PCBs, total		0.298	0.167
TPH-Oil	4,700		4,600

*All concentrations in mg/kg DW

- A catch basin solids sample was collected from the Chemithon property (sample CB142, collected from Chemithon catch basin #18) on May 21, 2009. Zinc (882 mg/kg DW), TPH-oil (3,400 mg/kg DW), BEHP (4.1 mg/kg DW), BBP (0.17 mg/kg DW), and total PCBs (1.55 mg/kg DW) were detected at concentrations above storm drain screening levels. Complete sample results are presented in Appendix E; sample locations are shown in Figure 5.

5.12.1 Duwamish Shipyard

Current Operations	Equipment and container storage
Historical Operations	Repair and maintenance of floating vessels and equipment
Address	5658 West Marginal Way SW, Seattle 98106
Facility/Site ID	2071 (Duwamish Shipyard Inc)
Chemicals of Concern	Metals (arsenic, lead, mercury, cadmium, copper, zinc), PAHs, VOCs, petroleum hydrocarbons, phthalates, PCBs
Media Affected	Soil, groundwater, stormwater

Source Control Actions

- Agreed Order DE-6735, to conduct an RI/FS and to develop a draft Cleanup Action Plan, was signed by Duwamish Shipyard, Inc. on July 9, 2009 (Ecology 2009o). The public comment period will begin on July 31, 2009, and end on August 31, 2009.

5.12.2 Glacier Northwest, Inc./Former Reichhold Site

Current Operations	Cement terminal
Historical Operations	Lumber mill, chemical manufacturing, cement production
Address	5900-5902 West Marginal Way SW, Seattle 98106
Facility/Site ID	23881883 (Glacier Northwest Seattle Terminal) 67234947 (Glacier Northwest Marginal Way Truck Shop)
Chemicals of Concern	Metals (arsenic, zinc), phthalates, PCBs, dioxins/furans, chlorophenols
Media Affected	Soil, groundwater, surface water, sediment

Source Control Actions

- EPA sent a CERCLA 104(e) Request for Information letter to Reichhold, Inc. on August 27, 2008. Ecology has received and reviewed the documents disclosed under the 104(e) letter.
- Glacier Northwest identified an error in the Data Gaps Report for this source control area (SAIC 2007f). The Data Gaps Report had incorrectly indicated that Glacier Northwest produced cement at this location; according to Glacier Northwest, a cement kiln has never been present at this property. A concrete batch plant operated at the site intermittently for 18 months. The onsite truck shop facility mentioned in the Data Gaps Report and SCAP is limited to light maintenance, including tire and light changes and topping off of fluids, and does not include oil changes or heavy maintenance (Cargill 2009).
- In addition, Ecology has been informed by Reichhold that the company did not manufacture plastic polymers for the automobile industry at this location. Reichhold manufactured resins, glues, and phenols, including petachlorophenol and sodium pentachlorophenate, at the site (Cargill 2009).
- An independent investigation that had been conducted prior to completion of the SCAP but had not been disclosed to Ecology is the *Remedial Investigation Report, Lone Star/Reichhold Site*, prepared by Remediation Technologies, Inc. in May 1996. This report documented detections of TPH, 2-chlorophenol, 2,4-dichlorophenol, 2,4,6-tetrachlorophenol, arsenic and silver in soil, and formaldehyde, pentachlorophenol, 2,3,4,6-tetrachlorophenol, and arsenic in groundwater (Cargill 2009).
- An independent remediation was conducted and is summarized in the *Remedial Activities Summary Report* for the Reichhold-Glacier Northwest Site, prepared by Shaw Environmental, Inc., and submitted to Ecology in April 2008. This report documents the independent remedial actions, which included seven years of ozone sparging and two hydrogen peroxide injections. Targeted concentrations of pentachlorophenol and arsenic were temporarily reduced and have since rebounded (Cargill 2009).
- Ecology sent a draft Agreed Order to both Glacier Northwest, Inc. and Reichhold, Inc. on September 29, 2008. The PLPs met with Ecology several times and exchanged two draft documents, which have been revised. On April 3, 2009, Ecology sent a final draft to the

PLPs for signature. The Agreed Order was signed by representatives of both Glacier Northwest and Reichhold, and was received by Ecology on May 14, 2009 (Perkins Coie 2009).

- Under the Agreed Order, Glacier and Reichhold will conduct an RI/FS at the site. The RI will determine the nature and extent of contamination in the upland area soil, groundwater, stormwater and stormwater solids, seeps, and sediments. The FS will use the results of the RI to evaluate and select cleanup action alternatives for the site. The public comment period for the draft Agreed Order ends on July 20.
- Ecology prepared a draft Public Participation Plan in March 2009. Ecology received PLP comments on the plan on April 21, 2009, and a final plan was issued by Ecology in June 2009 (Ecology 2009m).
- A baseline groundwater sampling event was conducted in March 2009 (Ipsen 2009). Sample results from the 23 wells at the site included the following (Ipsen 2009): total arsenic (0.6 to 3,090 µg/L), total chromium (<1 to 7.6 µg/L), total copper (<2 to 3.5 µg/L), total zinc (<10 to 54.8 µg/L), pentachlorophenol (<1 to 48 µg/L), and formaldehyde (<0.005 to 0.013 µg/L).
- Glacier Northwest is currently preparing a Data Gaps Report and a Work Plan for an interim cleanup action for arsenic contamination (Ecology 2009o).

5.12.3 Terminal 115 North (Former MRI Corporation)

Current Operations	Leased to Polar Supply (construction materials)
Historical Operations	Tin reclamation; construction material supply; industrial lumber sales
Address	6000 West Marginal Way SW, Seattle 98106
Facility/Site ID	2177
Chemicals of Concern	Metals (arsenic, zinc, lead)
Media Affected	Soil, groundwater

Source Control Actions

- Ecology sent a preliminary PLP letter to the Port of Seattle on January 20, 2009 (Cargill 2009).
- Ecology met with the Port of Seattle on March 25, 2009, to discuss activities at the former MRI facility, currently known as Terminal 115 North. The port requested that an investigation of this site be performed without a formal Order, since an Order could result in extended time and effort due to contracting rules. The port has funds available for data collection on an existing contract. Ecology agreed that for the short term, the port could apply to the VCP. An Agreed Order may be needed in the future.
- The Port of Seattle and Ecology signed a VCP agreement in May 2009 (Ecology 2009f). The VCP application lists five former aboveground storage tanks (ASTs) at this location that were used for storage of plating solution, spent plating solution, and de-tinning solution. These tanks have been removed. One soil sample collected from the site in 1997

contained lead at 470 mg/kg, above the MTCA Method A residential soil cleanup level (250 mg/kg) but below the industrial cleanup level (1,000 mg/kg). The Port of Seattle plans to conduct an RI at this site (Ecology 2009f); a Data Gaps Report and Work Plan will be submitted to Ecology for review in August 2009 (Ecology 2009o).

Table 18. Source Control Action Items – RM 1.3-1.6 West (Glacier Bay)

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
SW Kenny SD (Glacier Bay Outfall)	Collect in-line sediment samples to evaluate whether contaminants are currently being transported to Glacier Bay via this pathway.	Medium	SCAP	SPU	Complete	--	March 2009	Zinc, PAHs, phthalates, PCBs, and TPH-oil present at elevated concentrations.
	If COCs are present in the storm drain line, conduct source tracing to identify sources of contaminants.	Medium	SCAP	SPU	Planned	2009		
Alaska Marine Lines	Sample groundwater along shoreline to determine whether residual site contaminants are being discharged to Glacier Bay.	Medium	SCAP	Alaska Marine Lines	Planned	TBD		
	Confirm location of former USTs that were removed in 1990.	Low	SCAP	Alaska Marine Lines	Planned	2009		
	Conduct follow-up inspection to ensure that concerns and recommendations from the January 2006 inspection have been addressed.	Low	SCAP	Ecology	Planned	2009		
	Verify that remediation associated with filling of graving dock was completed and all conditions met.	Low	SCAP	Ecology	Planned	2009		
Duwamish Shipyard	Negotiate an Agreed Order to address soil and groundwater contamination.	High	SCAP	Ecology, Duwamish Shipyard	Complete	--	July 2009	
	Clean out stormwater catch basins and lines, sample solids, and report results; clean and prepare video-documentation of stormwater system.	High	SCAP	Duwamish Shipyard	Complete	--	January 2008	
	Evaluate results of test pit and soil stock pile testing.	Low	New	Duwamish Shipyard	Complete	--	January 2008	None needed; no exceedances of MTCA cleanup levels.
	Prepare work plans for further site investigations as specified in the Agreed Order.	High	SCAP	Duwamish Shipyard	Planned	2009		
	Conduct site investigations as specified in the Agreed Order Statement of Work.	High	SCAP	Duwamish Shipyard	Planned	2010		
	Review site investigation results and assess potential for sediment recontamination and need for remedial actions.	High	SCAP	Ecology	Planned	2010/2011		
Glacier Northwest/ Former Reichhold	Direct current and/or previous property owners/operators to conduct site characterization investigations.	High	SCAP	Ecology	Complete	--	May 2009	An Agreed Order was negotiated to address soil, surface water, and groundwater contamination. Specific activities to be conducted are identified as follow-up action items below.
	Under the Agreed Order, require PLPs to prepare a Data Gaps Report.	High	Follow-on	Ecology	In Progress	Summer 2009		
	Under the Agreed Order, require PLPs to prepare work plans for site investigations as specified by Ecology.	High	SCAP	Property owner/operator	Planned	June 2010		

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Upon approval of work plans by Ecology, conduct site investigations as specified.	High	SCAP	Property owner/operator	Planned	Spring 2011 to Spring 2012		
	Review site investigation results and assess potential for sediment recontamination and need for remedial actions.	High	SCAP	Ecology	Planned	Fall 2011		
	Conduct a site inspection to evaluate current operations with respect to stormwater and waste management.	Low	SCAP	Ecology, SPU	Complete	--	May 2009	Facility in compliance.
	Verify the storm drainage pathway at the site; if stormwater flow to the LDW is confirmed, assess the need for stormwater characterization.	Medium	SCAP	SPU, Ecology	Planned	2009		
	Issue CERCLA 104(e) request to the facility and property owners to obtain additional information on current and historical operations.	Low	New	EPA	Complete	--	2008	
	Review CERCLA 104(e) response submitted by Glacier Northwest.	Medium	Follow-on	EPA, Ecology	Complete	--	2008	
	Review CERCLA 104(e) response submitted by Reichhold, Inc.	Medium	New	EPA, Ecology	Planned	2009		
Terminal 115 North (Former MRI Corporation)	Pursue further investigation of the potential for groundwater transport of contaminants to Glacier Bay or to storm drain lines which discharge to Glacier Bay; review results and determine whether remedial action is required.	Medium	SCAP	Ecology	Complete	--	2008	Port of Seattle to conduct a remedial investigation under the VCP.
	Require Port to enter the VCP in lieu of starting negotiations for Agreed Order.	Medium	New	Ecology	Complete	--	May 2009	
	Require Port to prepare Data Gaps Report and Remedial Investigation under VCP, including evaluation of arsenic in groundwater.	Medium	New	Ecology	Planned	2009		
	Negotiate an Agreed Order to address soil and groundwater contamination.	Medium	New	Ecology	Planned	Spring 2010		
	Conduct a site inspection to evaluate current operations with respect to stormwater and waste management.	Medium	SCAP	Ecology, SPU	Planned	2009		
	Verify the storm drainage pathway at the site; if stormwater flow to the LDW is confirmed, assess the need for stormwater characterization.	Medium	SCAP	SPU, Ecology	Planned	2009		
Chemithon	Prepare and/or update the SWPPP and processes to ensure that site activities do not result in transport of contaminants to the LDW.	Low	SCAP	Chemithon	Planned	2007		

Priority:

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

Type:

SCAP	Action item identified in the RM 1.3-1.6 W SCAP
Follow-On	Action item is a follow-on to an action item identified in the RM 1.3-1.6 W SCAP
New	Action item identified after publication of the RM 1.3-1.6 W SCAP

5.13 RM 1.6-2.1 West (Terminal 115)

A SCAP has not yet been prepared for this source control area, and therefore action items have not been identified at this time.

5.14 RM 2.2-3.4 West (Riverside Drive)

No source identification or control activities have been conducted to date.

5.15 RM 3.8-4.2 West (Sea King Industrial Park)

No source identification or control activities have been conducted to date.

5.16 RM 4.2-4.8 West (Restoration Areas)

No source identification or control activities have been conducted to date.

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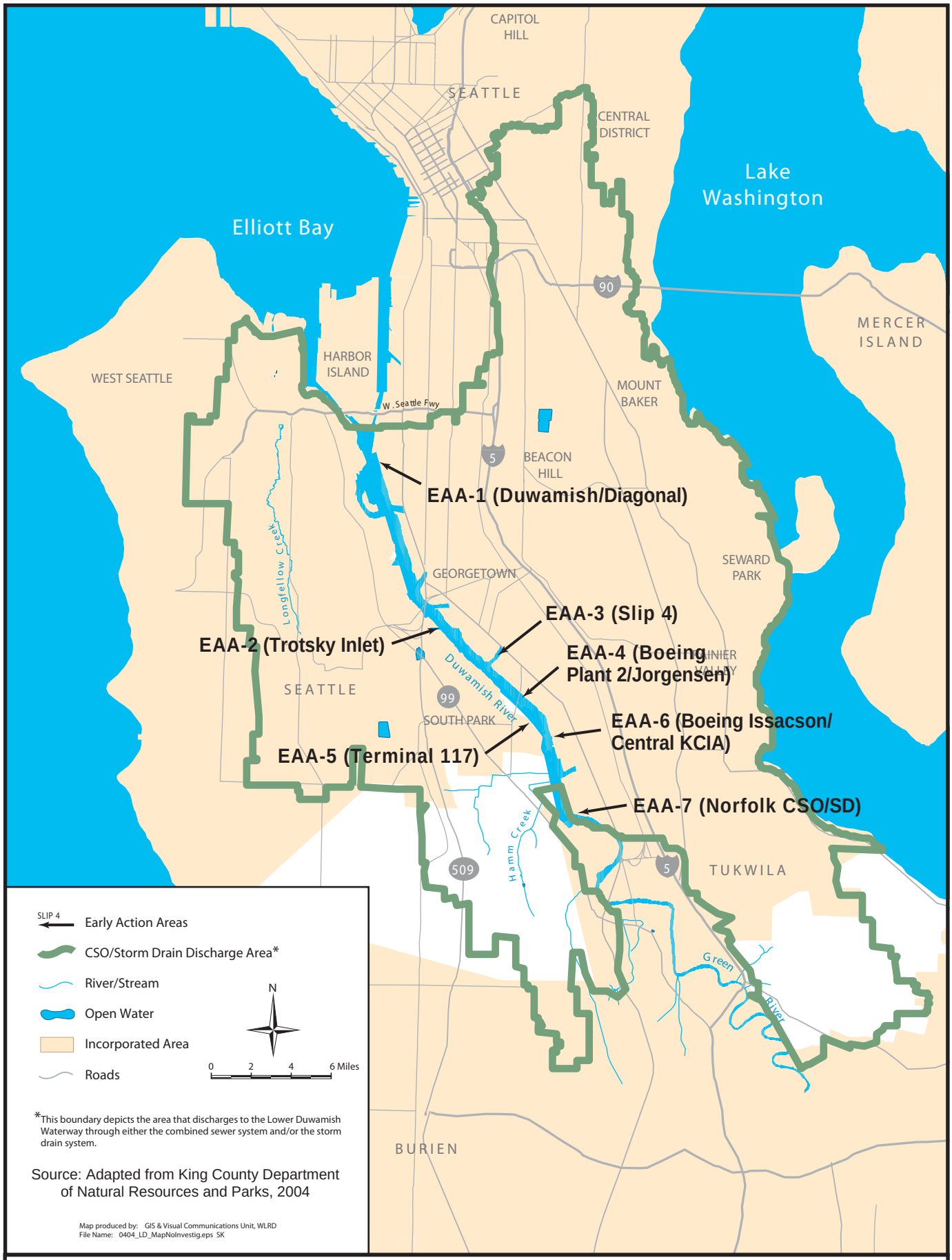

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Figure 1. Lower Duwamish Waterway Site

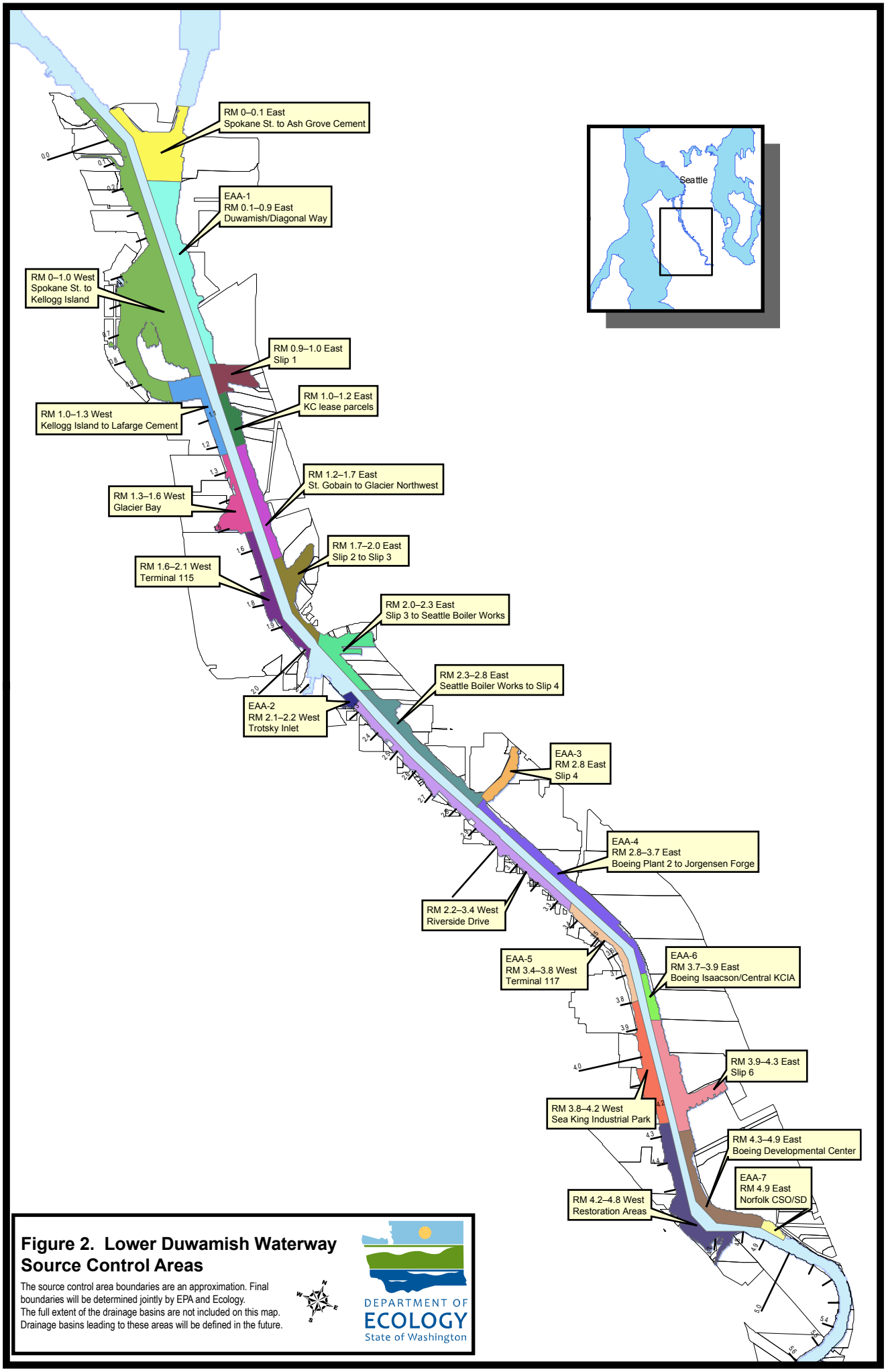

Figure 2. Lower Duwamish Waterway Source Control Areas

The source control area boundaries are an approximation. Final boundaries will be determined jointly by EPA and Ecology.
The full extent of the drainage basins are not included on this map.
Drainage basins leading to these areas will be defined in the future.

DEPARTMENT OF ECOLOGY
State of Washington

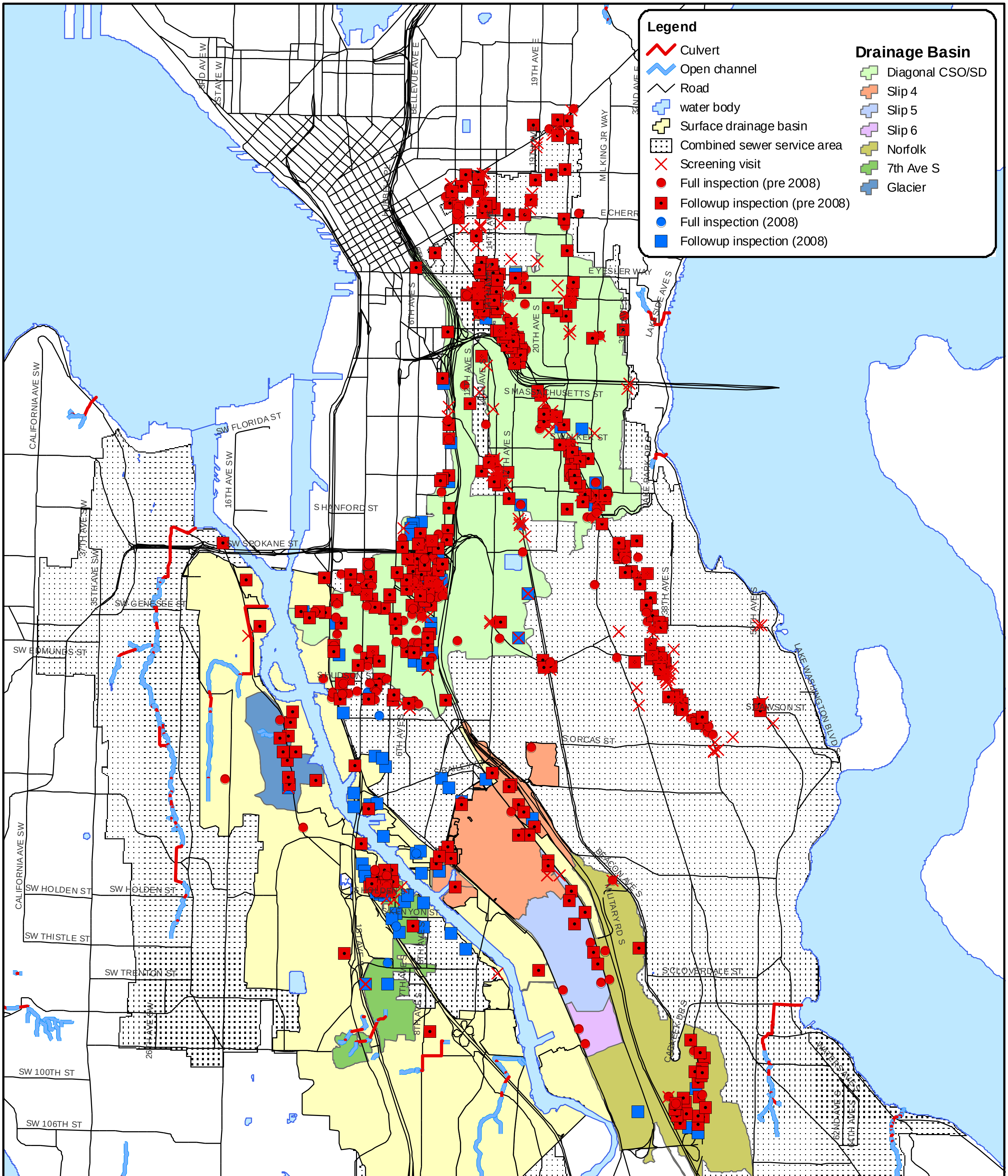

Figure 3. SPU Business Inspections through December 2008

N

Miles: 0, 0.25, 0.5, 1, 1.5, 2

WA State Plane North, NAD83

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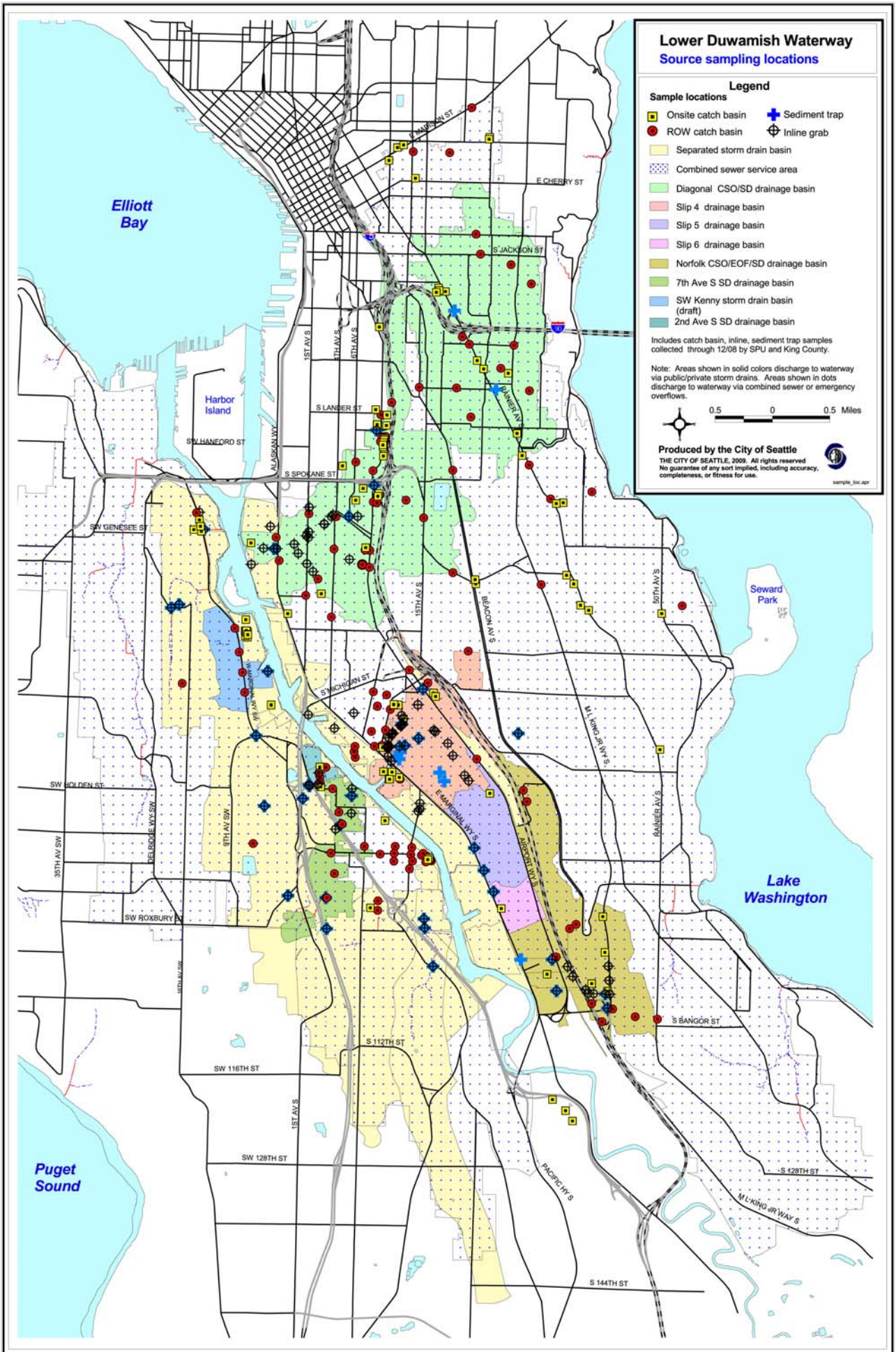

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Figure 4. Source Tracing Sample Locations Through December 2008

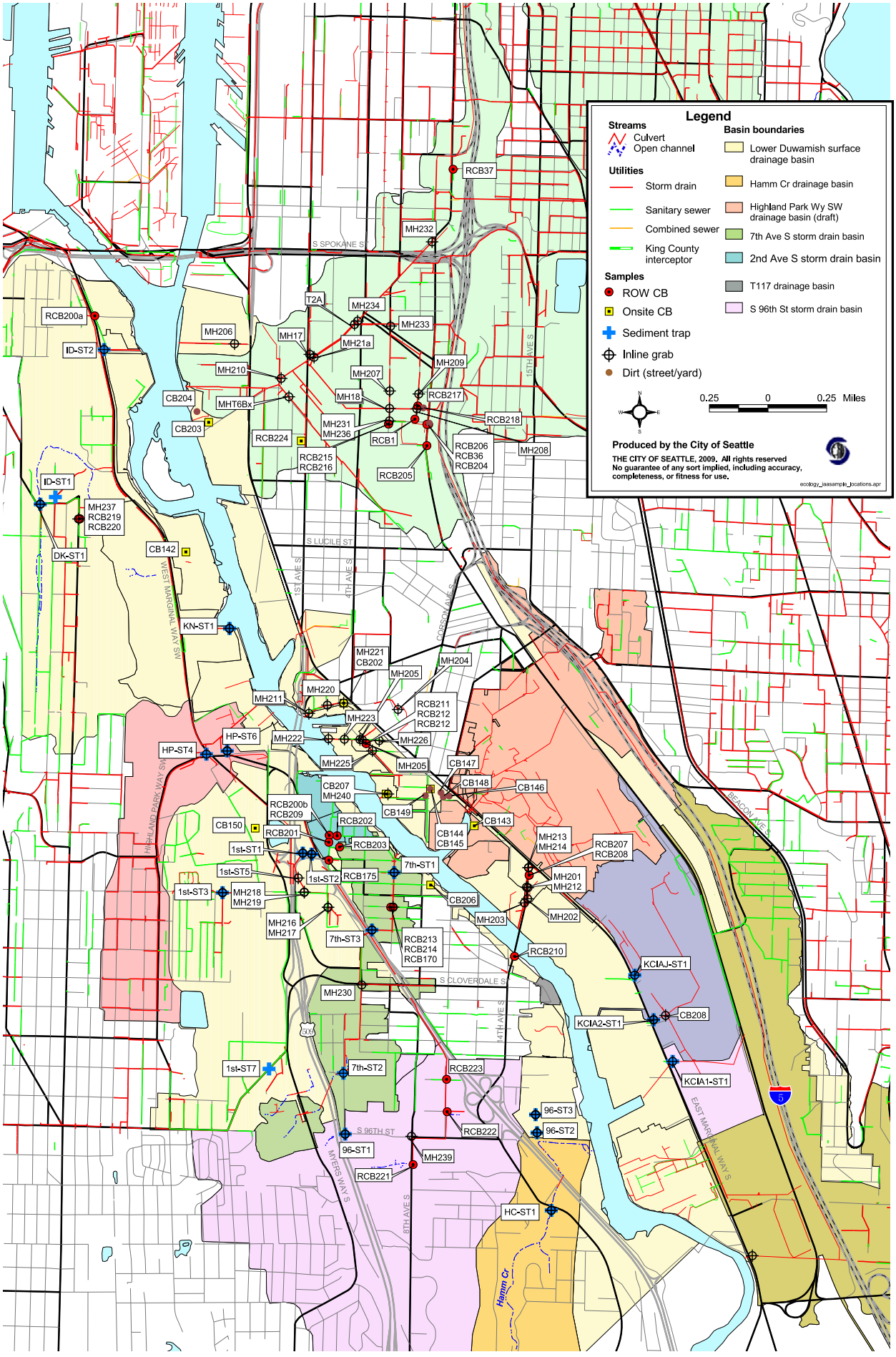
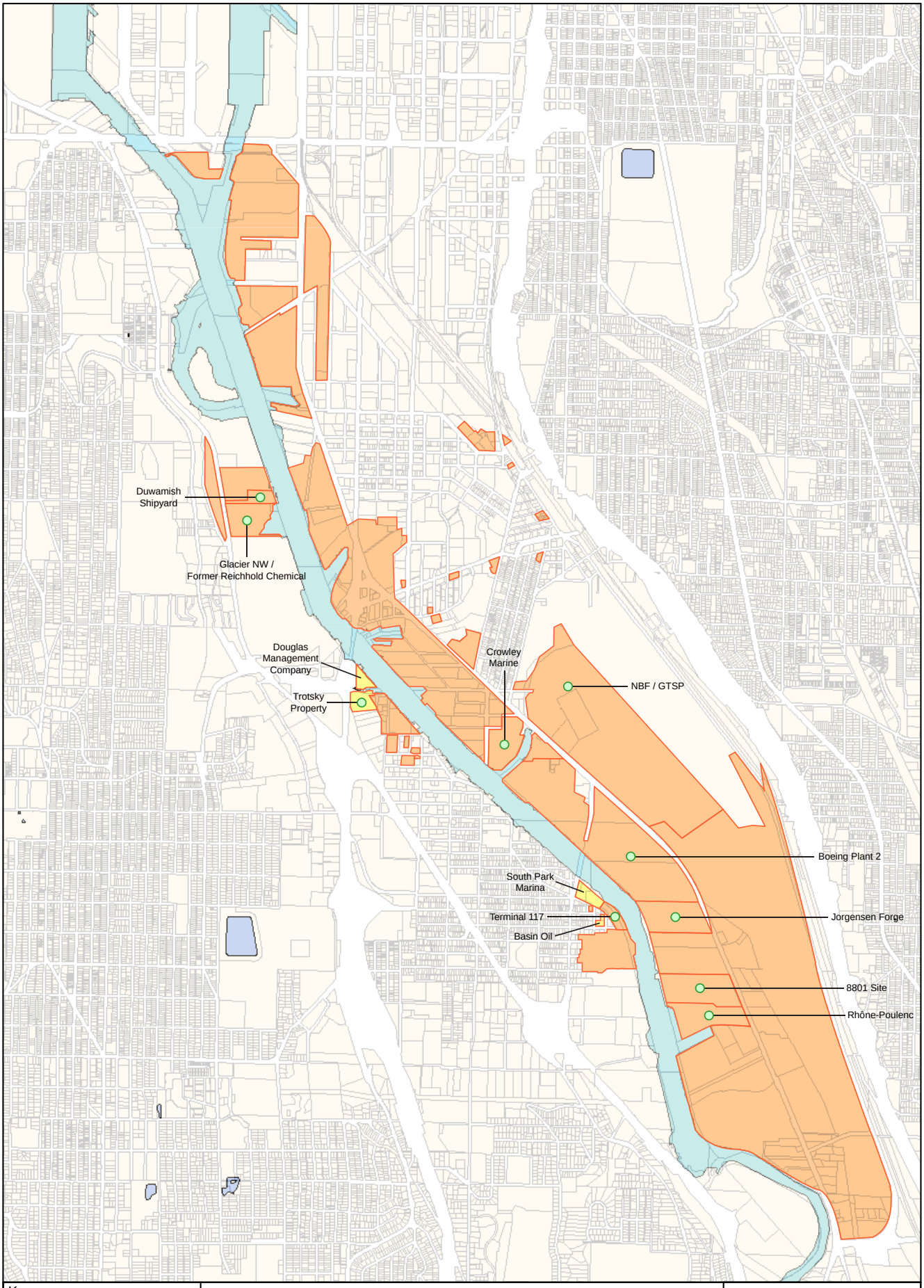


Figure 5. Source Tracing Samples – Ecology Inter-Agency Grant



Key

- Assessed Property
- Site Investigations
- LDW Cleanup Sites

Figure 6. Ecology Property Assessments Through June 2009

0 850 1,700 3,400 5,100 6,800 Feet

WA State Plane North
NAD83

N

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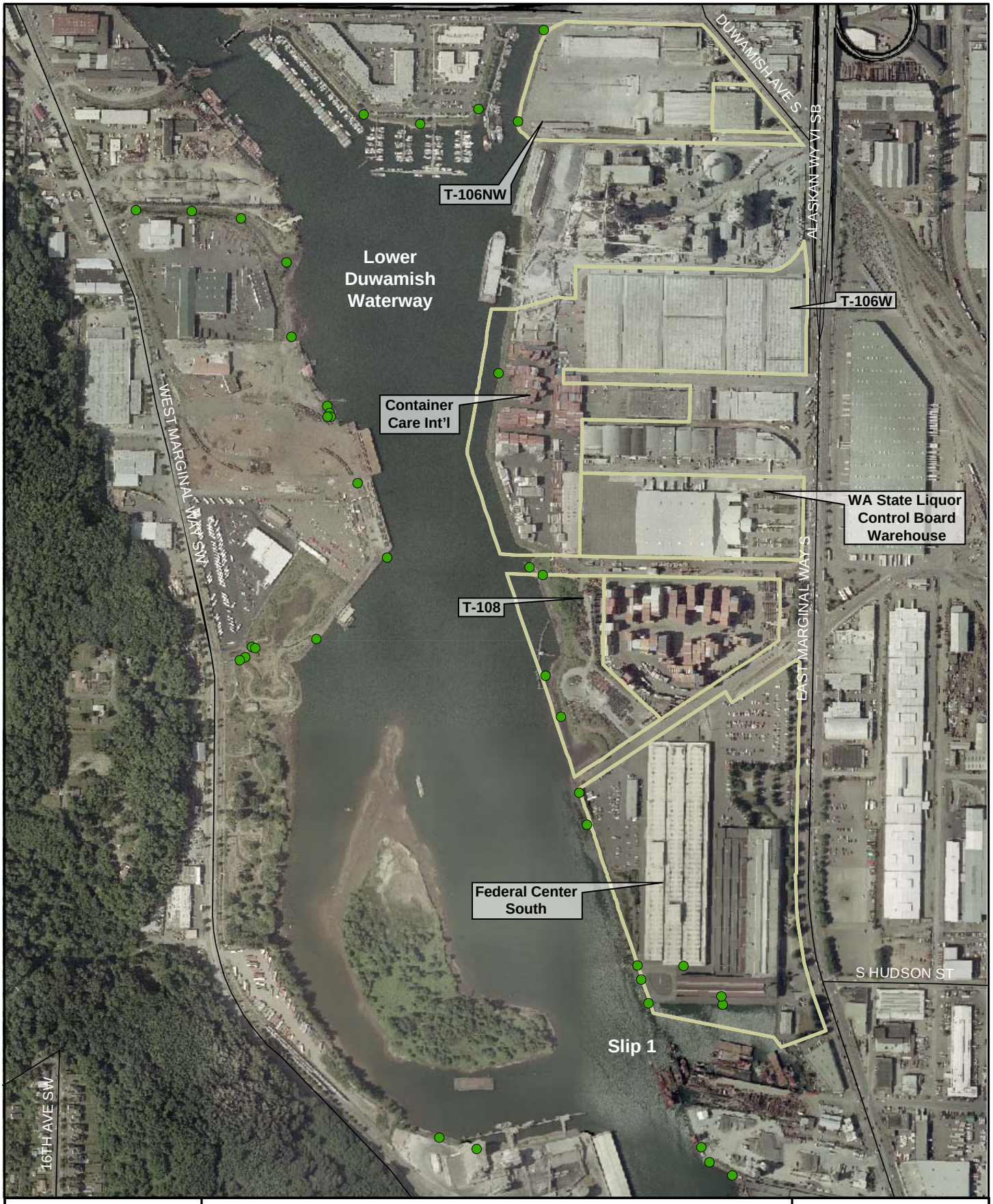

Key

- Property Boundary
- Road
- Outfall

Figure 7. Early Action Area 1 (Duwamish/Diagonal Way)

0 225 450 900 1,350 1,800 Feet

WA State Plane
North, NAD83

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N

Key

- Property Boundary
- Road
- Outfall

Figure 8. Early Action Area 2: Trotsky Inlet

0 100 200 400 600 800 Feet

WA State Plane North, NAD83

N

SAIC From Science to Solutions

Key

- Property Boundary
- Road
- Outfall

Figure 9. Early Action Area 3 (Slip 4)

0 250 500 1,000 1,500 2,000 Feet

WA State Plane North, NAD83

N

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L. Delwiche SAIC, 2008

Key

- Property Boundary
- Road
- Outfall

Figure 10. Early Action Area 4
(Boeing Plant 2 to Jorgensen Forge)

0 187.5375 750 1,125 1,500 Feet

WA State Plane
North, NAD83

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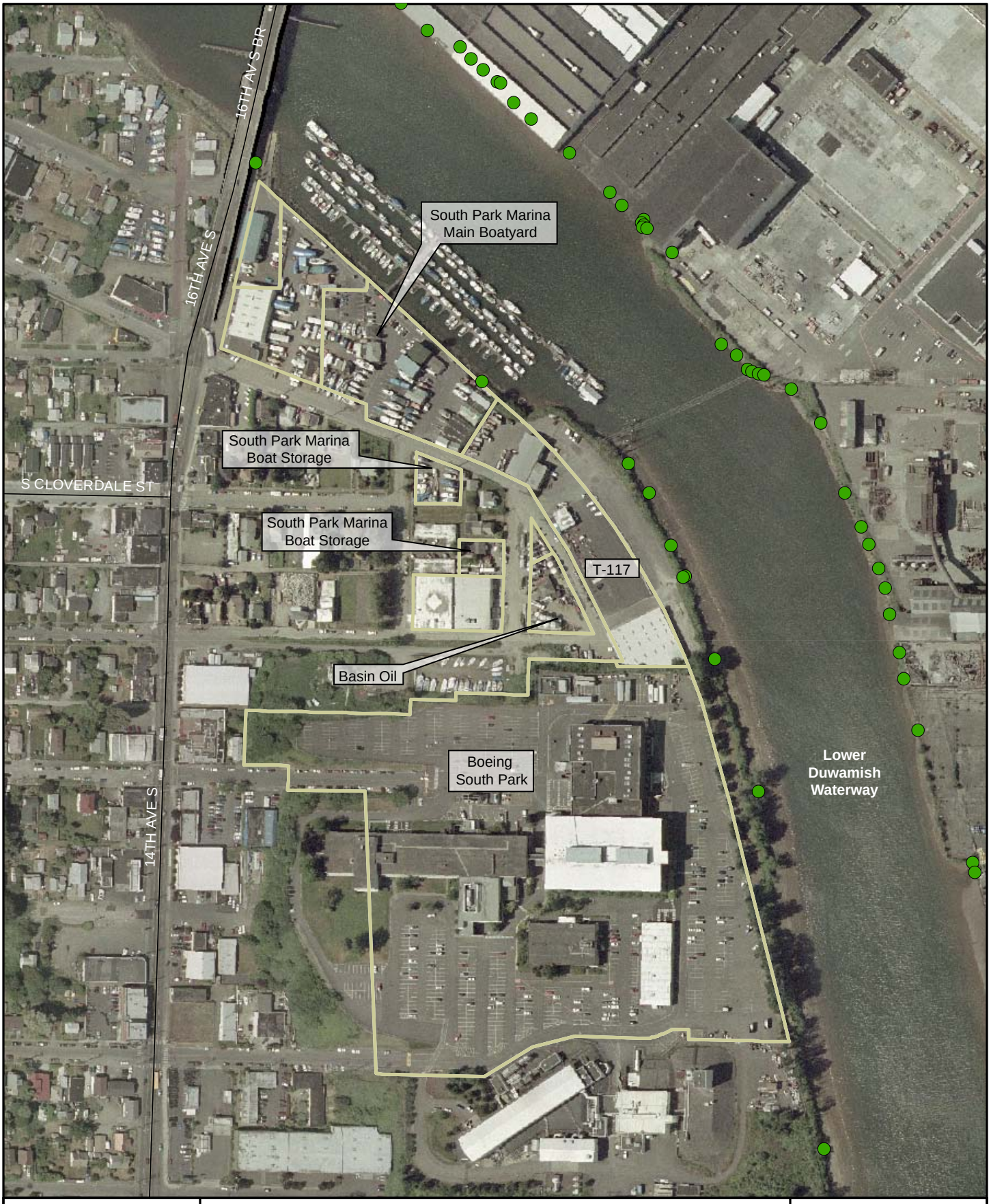

Key

- Property Boundary
- Road
- Outfall

Figure 11. Early Action Area 5 (Terminal 117)

0 100 200 400 600 800 Feet

WA State Plane North, NAD83

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Key

- Property Boundary
- Road
- Outfall

Figure 12. Early Action Area 6: Boeing Thompson and Isaacson Properties

0 125 250 500 750 1,000 Feet

WA State Plane North, NAD83

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N

Key

- Property Boundary
- Road
- Storm Drain

Figure 13. Early Action Area 6: Central KCIA

0 125 250 500 750 1,000 Feet

WA State Plane North, NAD83

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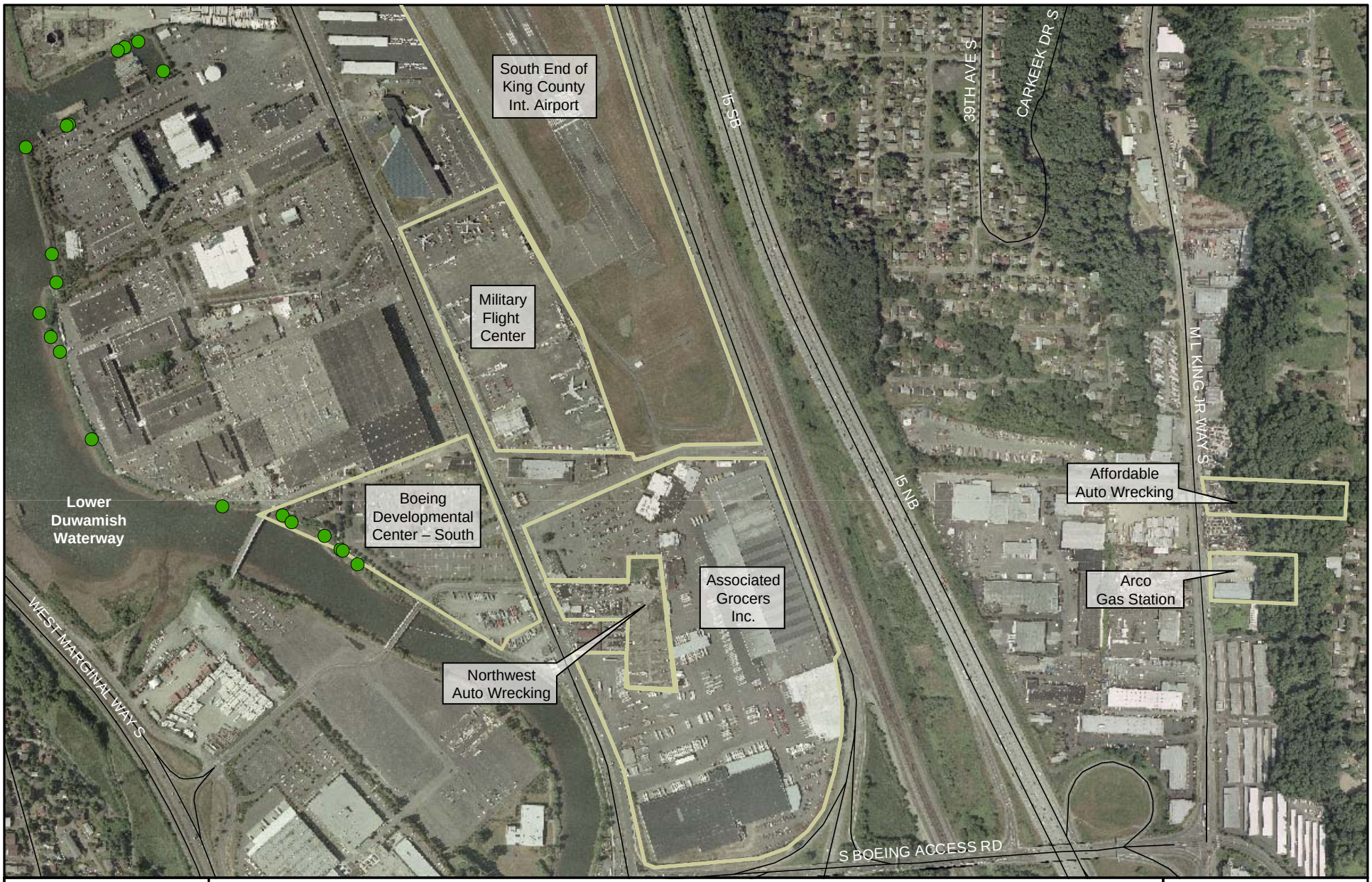

Key

- Property Boundary
- Road
- Outfall

Figure 14. Early Action Area 7 (Norfolk CSO/SD)

0 250 500 1,000 1,500 2,000 Feet

WA State Plane North, NAD83

N

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Key

- Property Boundary
- Road
- Outfall

Figure 15. RM 0.0 to 0.1 East: Spokane St. to Ash Grove Cement Source Control Area

0 150 300 600 900 1,200 Feet

WA State Plane North, NAD83

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Figure 16. RM 0.9–1.0 East: Slip 1

Key

- Property Boundary
- Road
- Outfall

Figure 17. RM 1.2 – 1.7 East: St. Gobain to Glacier Northwest Source Control Area

0 125 250 500 750 1,000 Feet

WA State Plane North, NAD83

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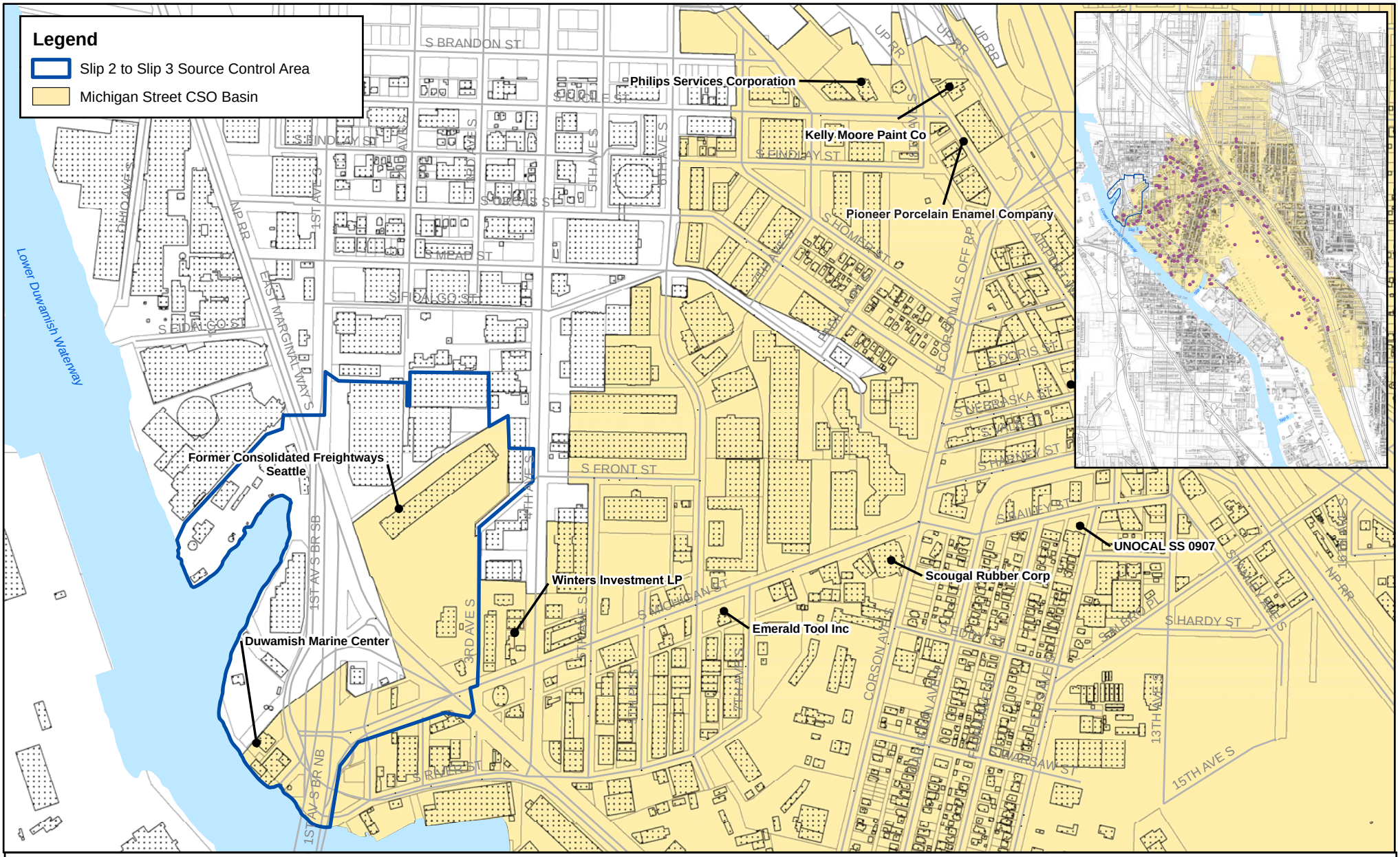
DEPARTMENT OF ECOLOGY
State of Washington

Figure 18. Slip 2 to Slip 3 Source Control Area

0 125 250 500 750 1,000 Feet

SAIC From Science to Solutions

...\GIS\projects\LDW\Basin_Data_Gaps\Slip2-3.mxd M.Goff 8/4/08 WA State Plane NAD 83 - feet 1 inch ~ 210 feet



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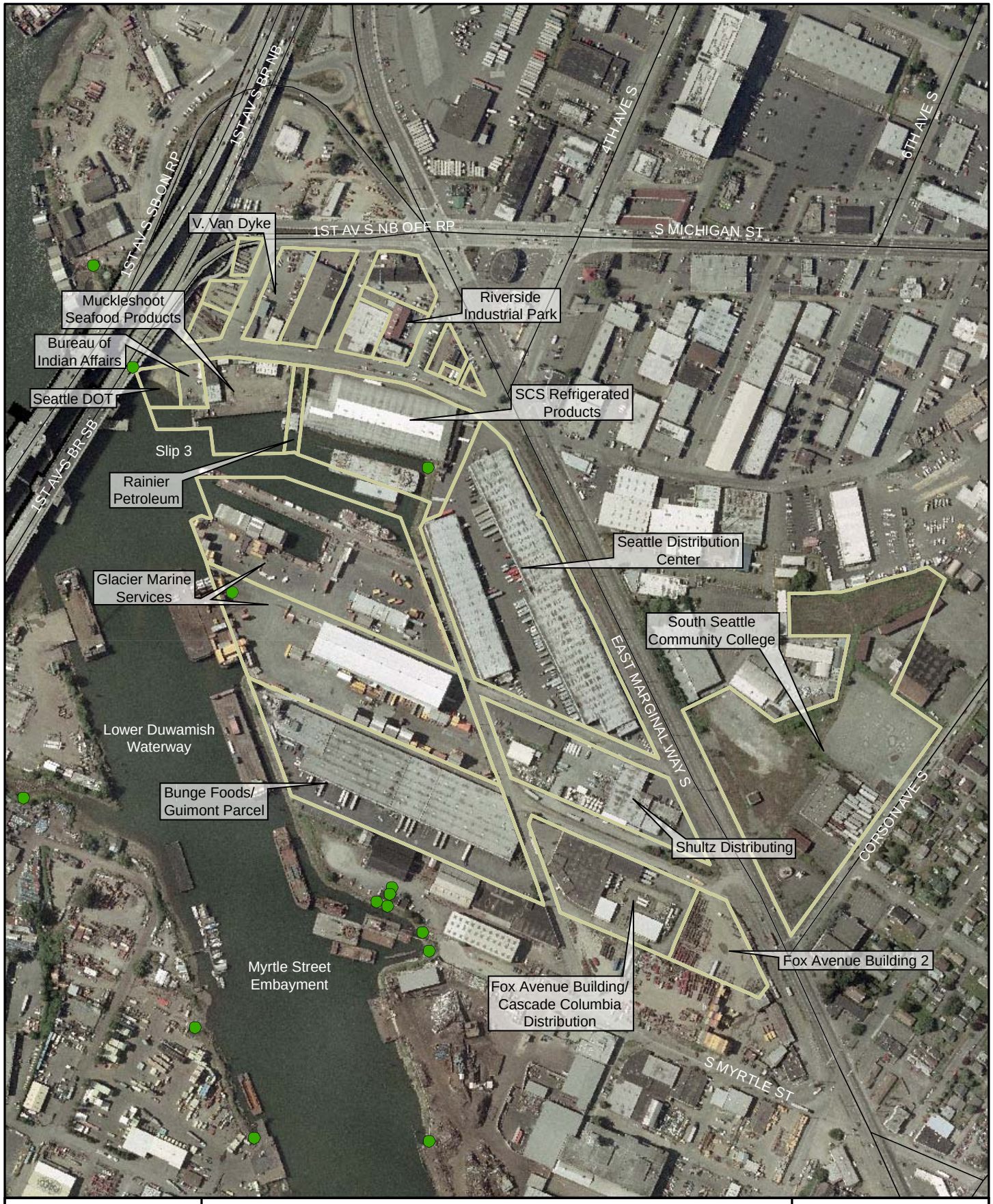
DEPARTMENT OF ECOLOGY
State of Washington

Figure 19. Potential Sources Within the Michigan Street CSO Basin

0 250 500 1,000 1,500 2,000
Feet

SAIC From Science to Solutions

X:\LDW_drainage_GIS\projects\LDW\Basin_Data_Gaps\Michigan CSO CSCSL sites.mxd R.Otteman 1/13/09 WA State Plane NAD 83 - fe et



Key

- Property Boundary
- Road
- Outfall

Figure 20. RM 2.0–2.3 East: Slip 3 to Seattle Boiler Works

0 135 270 540 810 1,080 Feet

WA State Plane North, NAD83

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Key

- Property Boundary
- Road
- Outfall

Figure 21. RM 2.3–2.8 East: Seattle Boiler Works to Slip 4

0 125 250 500 750 1,000 Feet

WA State Plane
North, NAD83

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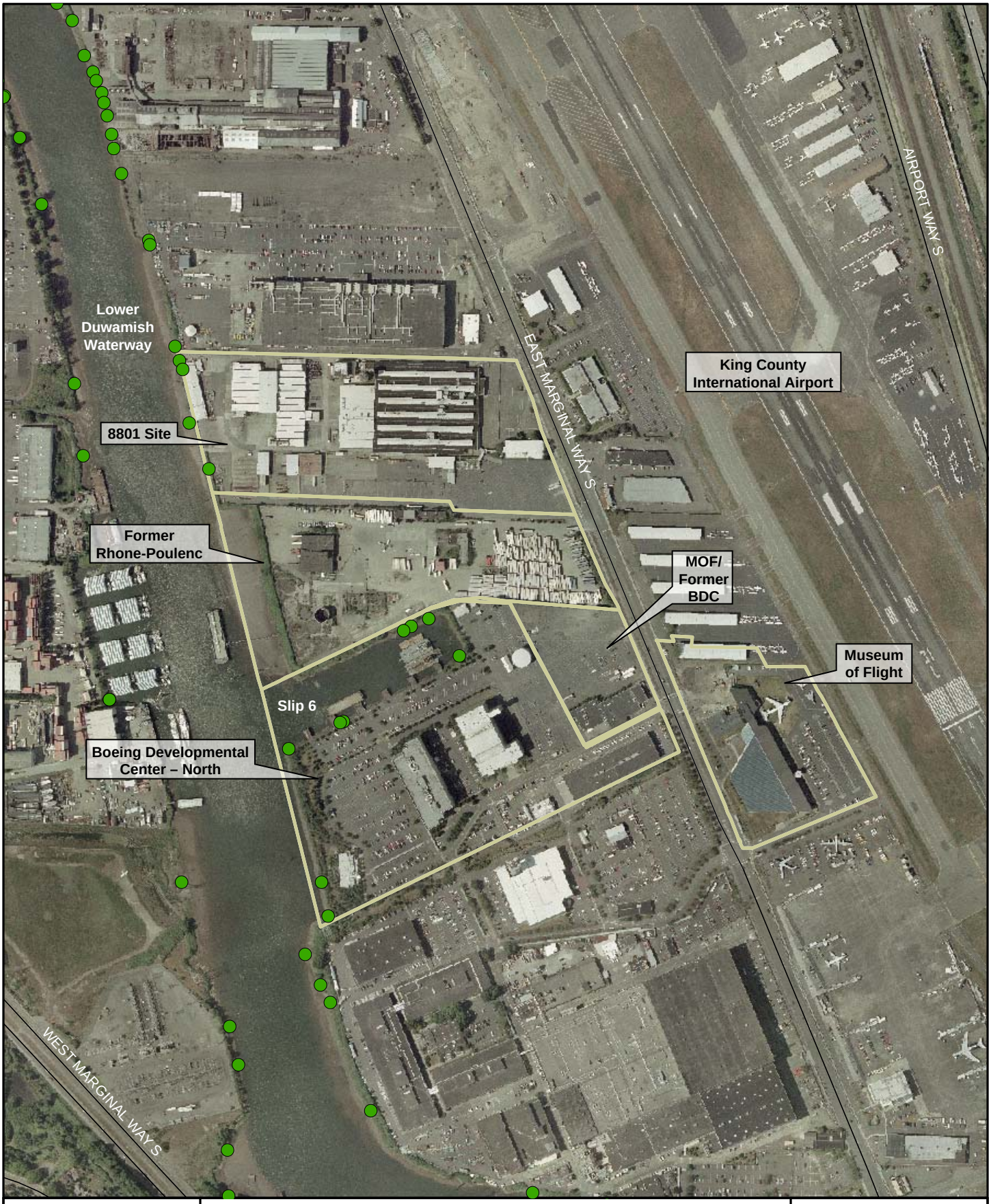
L. Delwiche SAIC, 2008



Key

- Property Boundary
- Road
- Outfall

Figure 22. RM 3.9–4.4 East (Slip 6)

0 175 350 700 1,050 1,400 Feet

WA State Plane North, NAD83

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L. Delwiche, SAIC 2008

Key

- Property Boundary
- Road
- Outfall

Figure 23. RM 1.3–1.6 West (Glacier Bay)

0 75 150 300 450 600 Feet

WA State Plane North, NAD83

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Appendix A
LDW Source Control Schedule

Basic Assumptions for Creating Schedule and Timeline

A set of basic assumptions was used to model the scenario for those tasks yet to be started or completed. For sites where work has already begun, actual dates were used wherever possible.

The following process assumptions were made:

- For areas where a SCAP has not been completed, each SCAP yields one site where soil or groundwater contamination requires cleanup to stop contamination or recontamination of sediments.
- For areas where a SCAP has been completed, each site identified in the SCAP that requires cleanup to stop contamination or recontamination of sediments will be shown on the chart if enough information is available to do so.
- Upland site cleanup is the critical path for source control for most sediment cleanup areas.
- Only sites that require cleanup or source control for the LDW Superfund contaminants of concern will be addressed in this schedule.
- This schedule does not include sites involving chlorinated solvents, pesticides or those actions needed to protect the water column.
- Ecology will use the MTCA rules and procedures for cleanup.
- All sites will require an administrative order, an RI/FS, and a cleanup action plan or one or more interim action plans.
- Once a site manager is assigned, an Agreed Order takes approximately 12 months to complete, as follows:
    - Credible evidence exists to support issuing a preliminary PLP notice letter to the owner/operator within two months of publication of the SCAP.
    - Owner/operator does not respond to preliminary PLP letter until the last day of the 30-day response period.
    - No new potential PLPs are identified who must be notified and included in negotiations.
    - PLP determination letter is sent one month after receiving the owner/operator response.
    - Negotiations for an Agreed Order begin 30 days after Ecology sends the PLP determination letter.
    - Negotiations are complete within five months of start of negotiations.
    - The public comment period includes two weeks to prepare, 30 days for comment, two weeks for responses.
- The draft RI takes 24 months. This includes sampling plans, field work, and first draft and final draft RI reports.
- The draft RI will identify interim actions necessary to control sources of sediment contamination/recontamination.

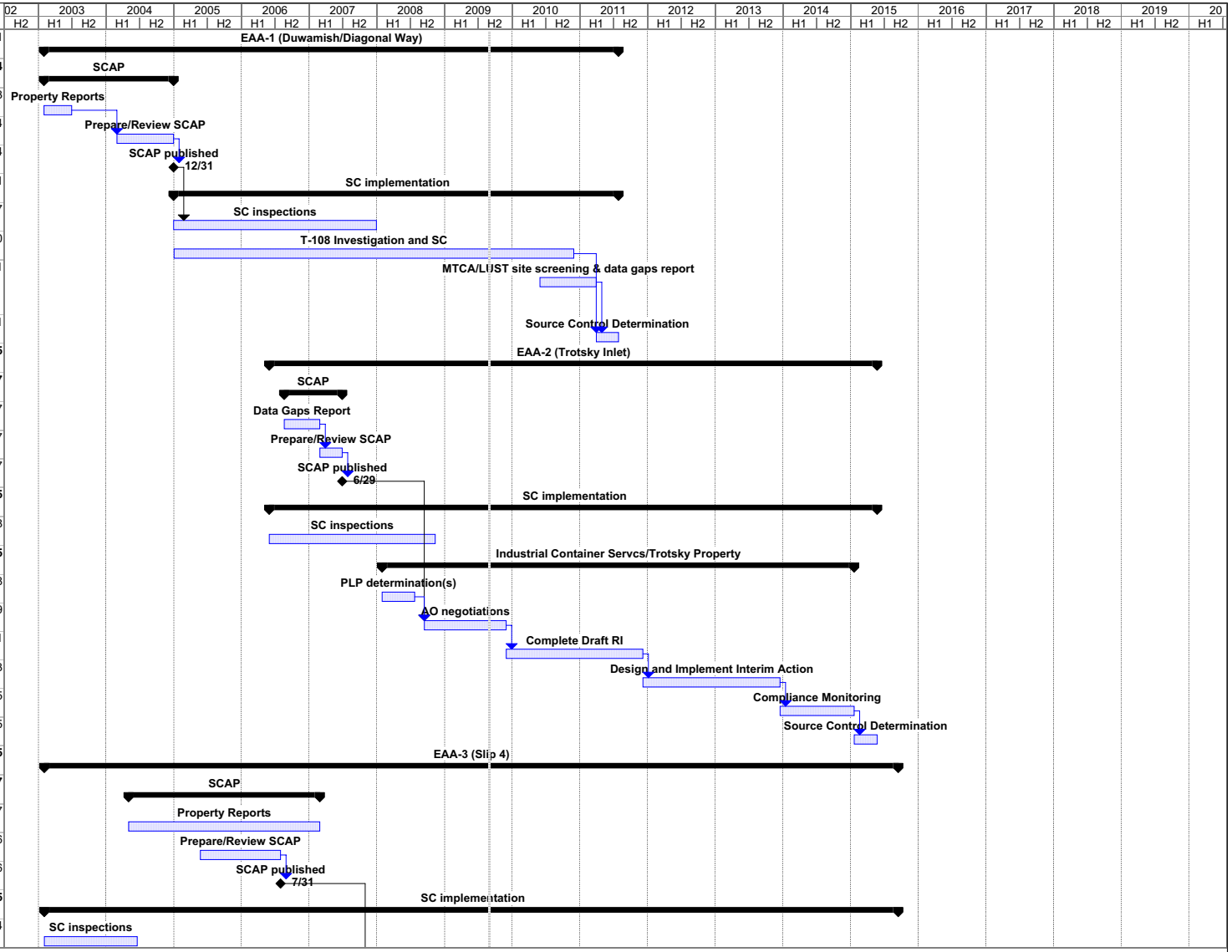
- An interim action plan will be started upon Ecology's acceptance of the draft RI.
- After completion of the draft RI, work on the interim actions and production of the final RI will be done concurrently. The FS and Cleanup Action Plan will also be done concurrently.
- The FS will be completed 12 months after acceptance of the final RI.
- **The interim actions do not require in-water work**.
- Interim actions to stop the release of contaminants are completed 24 months after completion of the draft RI. This includes negotiating the scope, developing the work plan, review and approval of design and monitoring plans, completion of the SEPA checklist, a 30 day public comment period, issuance of a DNS or Mitigated DNS, obtaining necessary permits, field work, and Ecology acceptance of the final action reports.
- Monitoring of the interim action starts one month after completion of field work, and continues for 12 months (assume quarterly monitoring), for a total of 13 months.
- Ecology accepts a final compliance monitoring report four months after the end of the monitoring period. Ecology determines the source is controlled.

The staffing scenario is based on known or anticipated assignments as of June 2009. The following staffing assumptions were made:

- A full-time site manager can handle a total of four sites.
- A full-time site manager, with no existing workload, can initially handle two sites, starting six months apart. Starting means initial file review to prepare the Preliminary PLP notice letter.
- Eighteen months after starting the first site, a full-time site manager will start file review for a third site. Six months later, they will start work on a fourth site.
- Four full-time site managers are assigned exclusively to the LDW.
- Work is underway at EAA-1 (Duwamish/Diagonal Way). The work at EAA-1 is being conducted by the Port of Seattle at Terminal 108 as an independent action. The Port is working with Ecology.
- Work at is underway at three EPA-lead sites:
    - EAA-4 (Boeing Plant 2/Jorgensen Forge bank)
    - EAA-5 (Terminal 117)
    - Rhone-Poulenc (RM 3.9-4.4 East; Slip 6) and
- Work has started at the following Ecology-lead sites; site managers for these sites are not dedicated to work on the LDW. They are not included in the projected schedule for full-time site managers:
    - EAA-4 (Jorgensen Forge uplands)
    - Fox Avenue Building (RM 2.0-2.3 East, Slip 3 to Seattle Boiler Works)

- Work has started at the following Ecology-lead sites (with full-time site managers):
    - North Boeing Field/Georgetown Steam Plant (EAA-3, Slip 4)
    - Crowley Marine Services (EAA-3, Slip 4)
    - Trotsky Property (EAA-2, Trotsky Inlet)
    - Boeing Isaacson/Thompson (EAA-6; Boeing Isaacson/Central KCIA)
    - 8801 Site (RM 3.9-4.4 East; Slip 6)
    - Duwamish Shipyard (RM 1.3-1.6 West; Glacier Bay)
    - Glacier Northwest/Reichhold (RM 1.3-1.6 West; Glacier Bay)
- If more than 16 sites need to be worked on, additional site managers will be added as necessary, subject to availability of positions and funding.
- Sufficient legal, technical and public involvement support will be added as the number of sites increases.

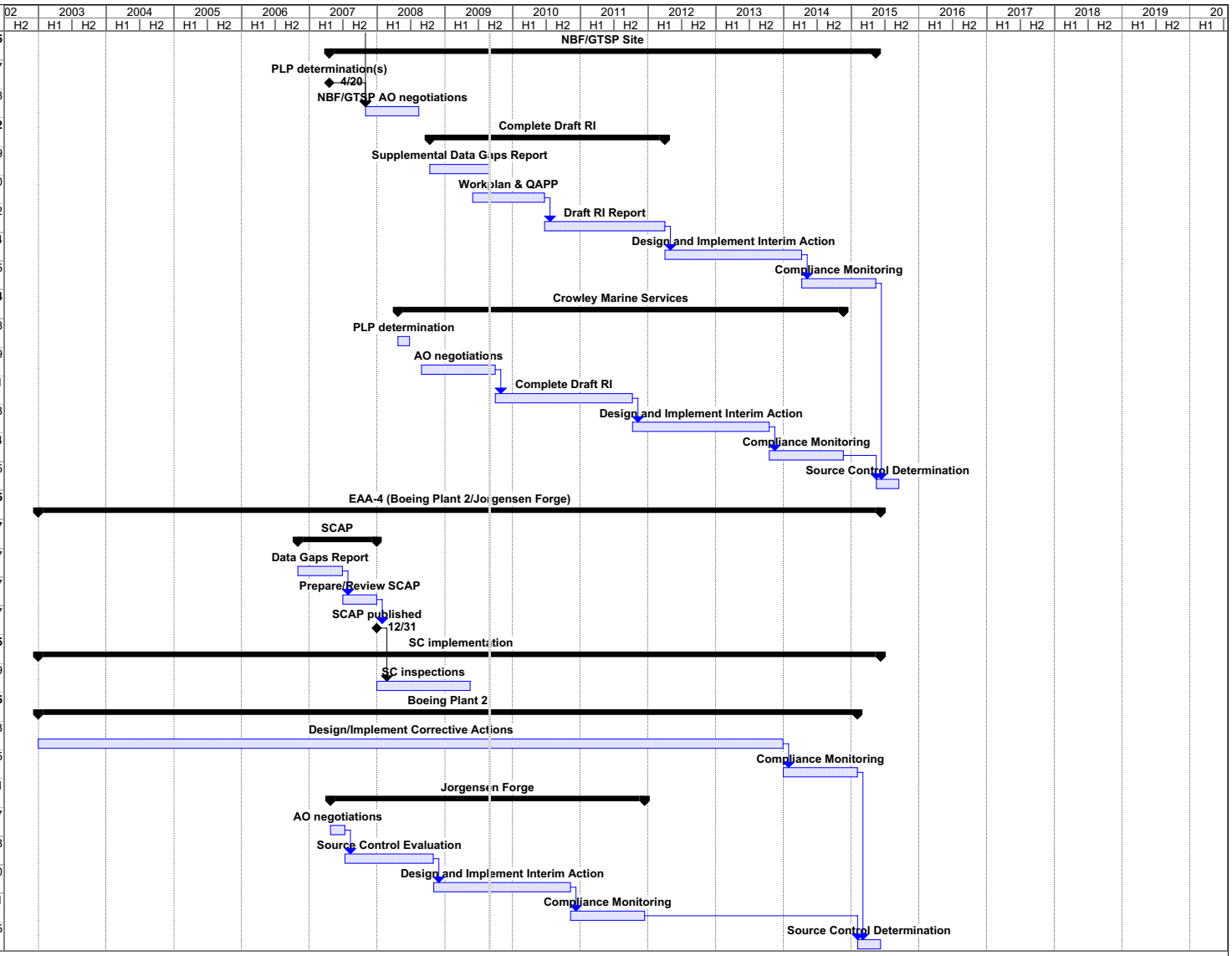
ID	Task Name	Start	Finish
1	**EAA-1 (Duwamish/Diagonal Way)**	**Sat 2/1/03**	**Fri 7/29/11**
2	**SCAP**	**Sat 2/1/03**	**Fri 12/31/04**
3	Property Reports	Sat 2/1/03	Mon 6/30/03
4	Prepare/Review SCAP	Mon 3/1/04	Fri 12/31/04
5	SCAP published	Fri 12/31/04	Fri 12/31/04
6	**SC implementation**	**Sat 1/1/05**	**Fri 7/29/11**
7	SC inspections	Sat 1/1/05	Mon 12/31/07
8	T-108 Investigation and SC	Mon 1/3/05	Tue 11/30/10
9	MTCA/LUST site screening & data gaps report	Tue 6/1/10	Thu 3/31/11
10	Source Control Determination	Fri 4/1/11	Fri 7/29/11
11	**EAA-2 (Trotsky Inlet)**	**Thu 6/1/06**	**Mon 5/25/15**
12	**SCAP**	**Mon 8/21/06**	**Fri 6/29/07**
13	Data Gaps Report	Mon 8/21/06	Wed 2/28/07
14	Prepare/Review SCAP	Thu 3/1/07	Fri 6/29/07
15	SCAP published	Fri 6/29/07	Fri 6/29/07
16	**SC implementation**	**Thu 6/1/06**	**Mon 5/25/15**
17	SC inspections	Thu 6/1/06	Wed 11/12/08
18	**Industrial Container Servcs/Trotsky Property**	**Thu 1/31/08**	**Wed 1/21/15**
19	PLP determination(s)	Thu 1/31/08	Thu 7/24/08
20	AO negotiations	Mon 9/15/08	Mon 11/30/09
21	Complete Draft RI	Tue 12/1/09	Thu 12/8/11
22	Design and Implement Interim Action	Fri 12/9/11	Tue 12/17/13
23	Compliance Monitoring	Wed 12/18/13	Wed 1/21/15
24	Source Control Determination	Thu 1/22/15	Mon 5/25/15
25	**EAA-3 (Slip 4)**	**Mon 2/3/03**	**Wed 9/16/15**
26	**SCAP**	**Mon 5/3/04**	**Wed 2/28/07**
27	Property Reports	Mon 5/3/04	Wed 2/28/07
28	Prepare/Review SCAP	Wed 5/25/05	Mon 7/31/06
29	SCAP published	Mon 7/31/06	Mon 7/31/06
30	**SC implementation**	**Mon 2/3/03**	**Wed 9/16/15**
31	SC inspections	Mon 2/3/03	Fri 6/18/04



Project: LDW SC functional level
Date: Fri 8/28/09

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External MileTask | Split

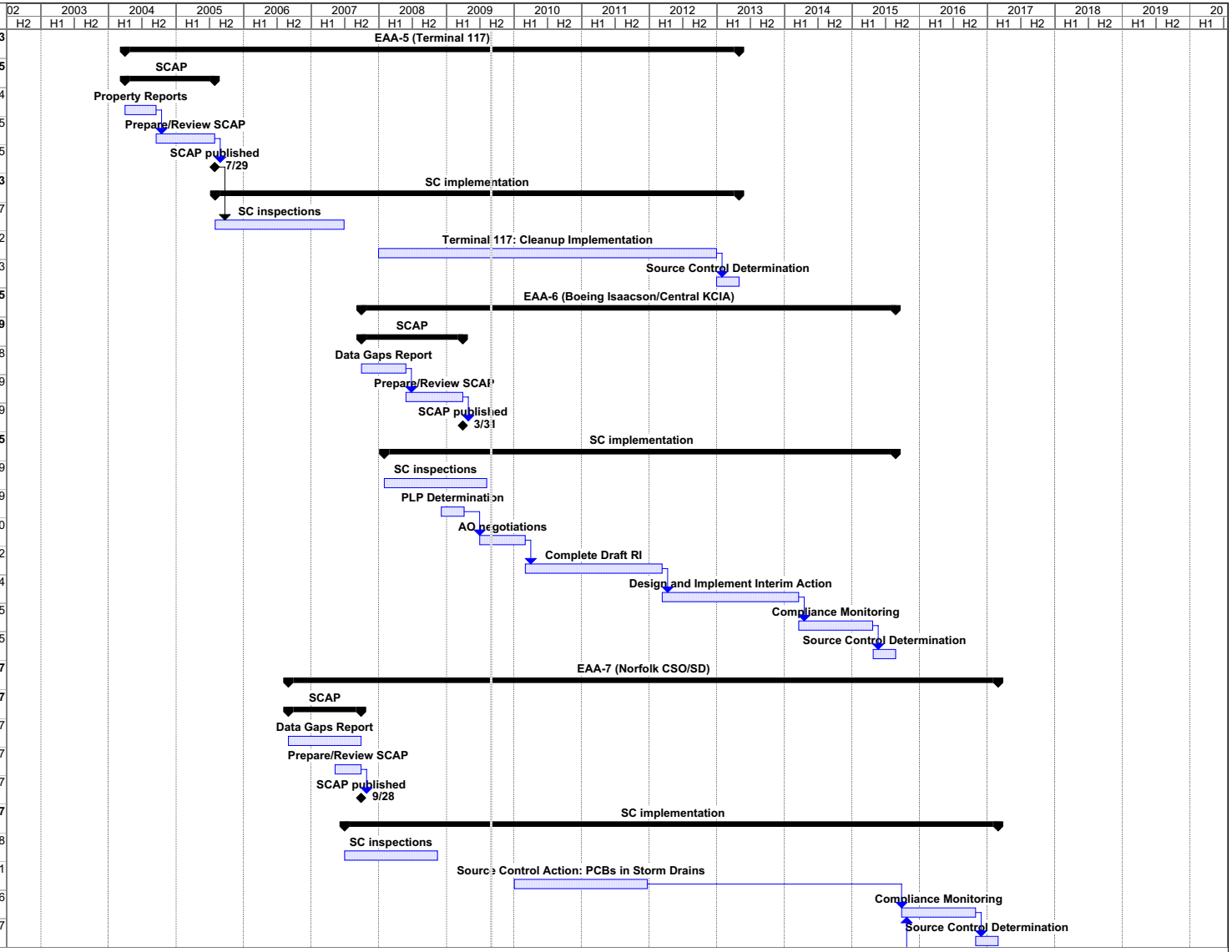
ID	Task Name	Start	Finish
32	**NBF/GTSP Site**	**Fri 4/20/07**	**Fri 5/15/15**
33	PLP determination(s)	Fri 4/20/07	Fri 4/20/07
34	NBF/GTSP AO negotiations	Thu 11/1/07	Thu 8/14/08
35	**Complete Draft RI**	**Mon 10/13/08**	**Mon 4/2/12**
36	Supplemental Data Gaps Report	Mon 10/13/08	Mon 8/31/09
37	Workplan & QAPP	Mon 6/1/09	Wed 6/23/10
38	Draft RI Report	Thu 6/24/10	Mon 4/2/12
39	Design and Implement Interim Action	Tue 4/3/12	Thu 4/10/14
40	Compliance Monitoring	Fri 4/11/14	Fri 5/15/15
41	**Crowley Marine Services**	**Thu 4/24/08**	**Fri 11/21/14**
42	PLP determination	Thu 4/24/08	Wed 6/25/08
43	AO negotiations	Fri 8/29/08	Wed 9/30/09
44	Complete Draft RI	Thu 10/1/09	Mon 10/10/11
45	Design and Implement Interim Action	Tue 10/11/11	Thu 10/17/13
46	Compliance Monitoring	Fri 10/18/13	Fri 11/21/14
47	Source Control Determination	Mon 5/18/15	Wed 9/16/15
48	**EAA-4 (Boeing Plant 2/Jorgensen Forge)**	**Wed 1/1/03**	**Wed 6/10/15**
49	**SCAP**	**Wed 11/1/06**	**Mon 12/31/07**
50	Data Gaps Report	Wed 11/1/06	Fri 6/29/07
51	Prepare/Review SCAP	Mon 7/2/07	Mon 12/31/07
52	SCAP published	Mon 12/31/07	Mon 12/31/07
53	**SC implementation**	**Wed 1/1/03**	**Wed 6/10/15**
54	SC inspections	Tue 1/1/08	Mon 5/18/09
55	**Boeing Plant 2**	**Wed 1/1/03**	**Thu 2/5/15**
56	Design/Implement Corrective Actions	Wed 1/1/03	Tue 12/31/13
57	Compliance Monitoring	Wed 1/1/14	Thu 2/5/15
58	**Jorgensen Forge**	**Thu 4/26/07**	**Thu 12/15/11**
59	AO negotiations	Thu 4/26/07	Thu 7/12/07
60	Source Control Evaluation	Fri 7/13/07	Fri 10/31/08
61	Design and Implement Interim Action	Mon 11/3/08	Wed 11/10/10
62	Compliance Monitoring	Thu 11/11/10	Thu 12/15/11
63	Source Control Determination	Fri 2/6/15	Wed 6/10/15



Project: LDW SC functional level
Date: Fri 8/28/09

Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External MileTask

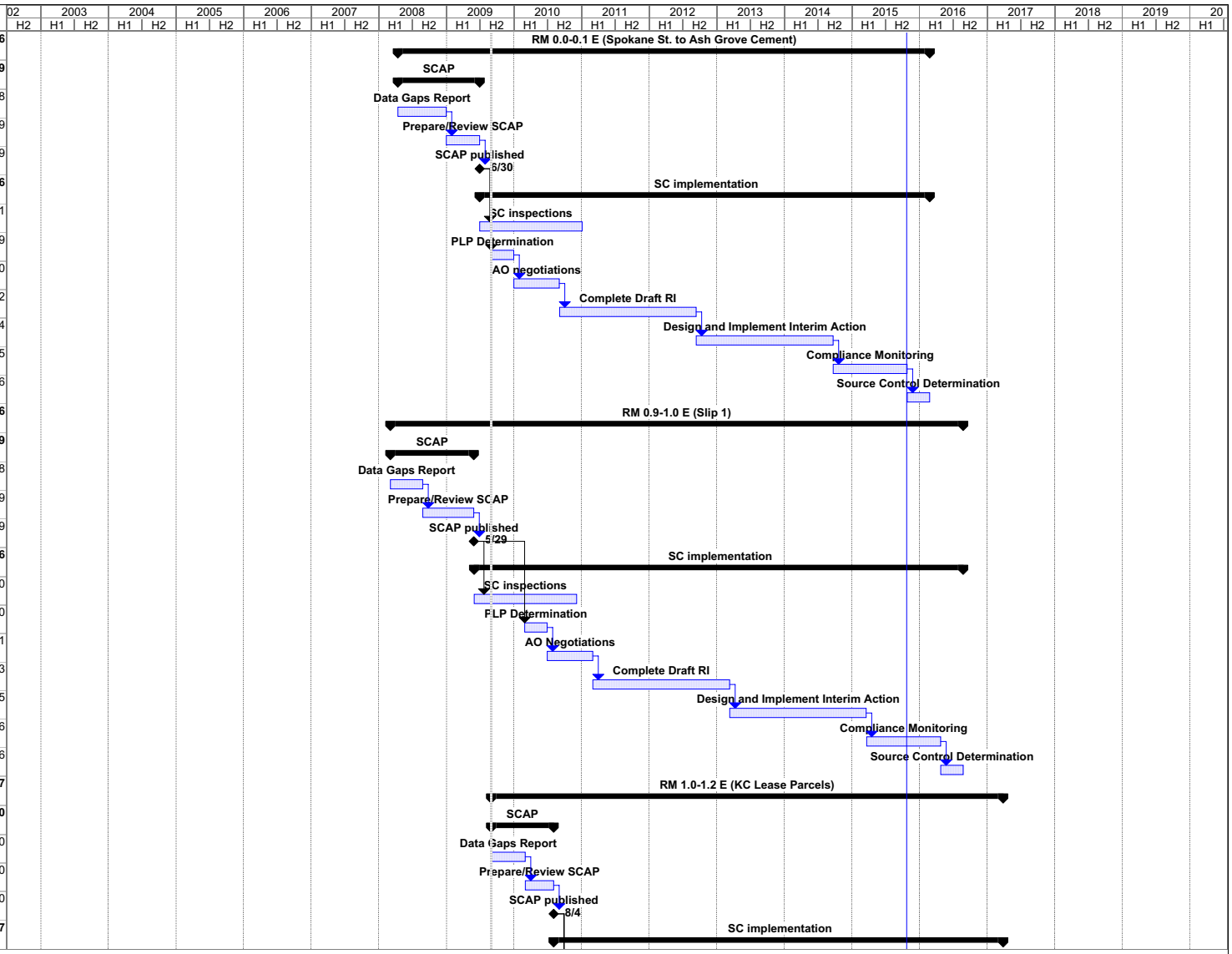
ID	Task Name	Start	Finish
64	**EAA-5 (Terminal 117)**	**Thu 4/1/04**	**Thu 5/2/13**
65	**SCAP**	**Thu 4/1/04**	**Fri 7/29/05**
66	Property Reports	Thu 4/1/04	Wed 9/15/04
67	Prepare/Review SCAP	Thu 9/16/04	Fri 7/29/05
68	SCAP published	Fri 7/29/05	Fri 7/29/05
69	**SC implementation**	**Mon 8/1/05**	**Thu 5/2/13**
70	SC inspections	Mon 8/1/05	Thu 6/28/07
71	Terminal 117: Cleanup Implementation	Tue 1/1/08	Mon 12/31/12
72	Source Control Determination	Tue 1/1/13	Thu 5/2/13
73	**EAA-6 (Boeing Isaacson/Central KCIA)**	**Mon 10/1/07**	**Wed 8/26/15**
74	**SCAP**	**Mon 10/1/07**	**Tue 3/31/09**
75	Data Gaps Report	Mon 10/1/07	Tue 5/27/08
76	Prepare/Review SCAP	Wed 5/28/08	Tue 3/31/09
77	SCAP published	Tue 3/31/09	Tue 3/31/09
78	**SC implementation**	**Fri 2/1/08**	**Wed 8/26/15**
79	SC inspections	Fri 2/1/08	Fri 8/7/09
80	PLP Determination	Fri 12/5/08	Tue 4/7/09
81	AO negotiations	Wed 7/1/09	Wed 3/3/10
82	Complete Draft RI	Thu 3/4/10	Mon 3/12/12
83	Design and Implement Interim Action	Tue 3/13/12	Thu 3/20/14
84	Compliance Monitoring	Fri 3/21/14	Fri 4/24/15
85	Source Control Determination	Mon 4/27/15	Wed 8/26/15
86	**EAA-7 (Norfolk CSO/SD)**	**Fri 9/1/06**	**Thu 3/2/17**
87	**SCAP**	**Fri 9/1/06**	**Fri 9/28/07**
88	Data Gaps Report	Fri 9/1/06	Fri 9/28/07
89	Prepare/Review SCAP	Fri 5/11/07	Fri 9/28/07
90	SCAP published	Fri 9/28/07	Fri 9/28/07
91	**SC implementation**	**Mon 7/2/07**	**Thu 3/2/17**
92	SC inspections	Mon 7/2/07	Fri 11/14/08
93	Source Control Action: PCBs in Storm Drains	Mon 1/4/10	Fri 12/23/11
94	Compliance Monitoring	Mon 9/28/15	Mon 10/31/16
95	Source Control Determination	Tue 11/1/16	Thu 3/2/17



Project: LDW SC functional level
Date: Fri 8/28/09

Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External MileTask

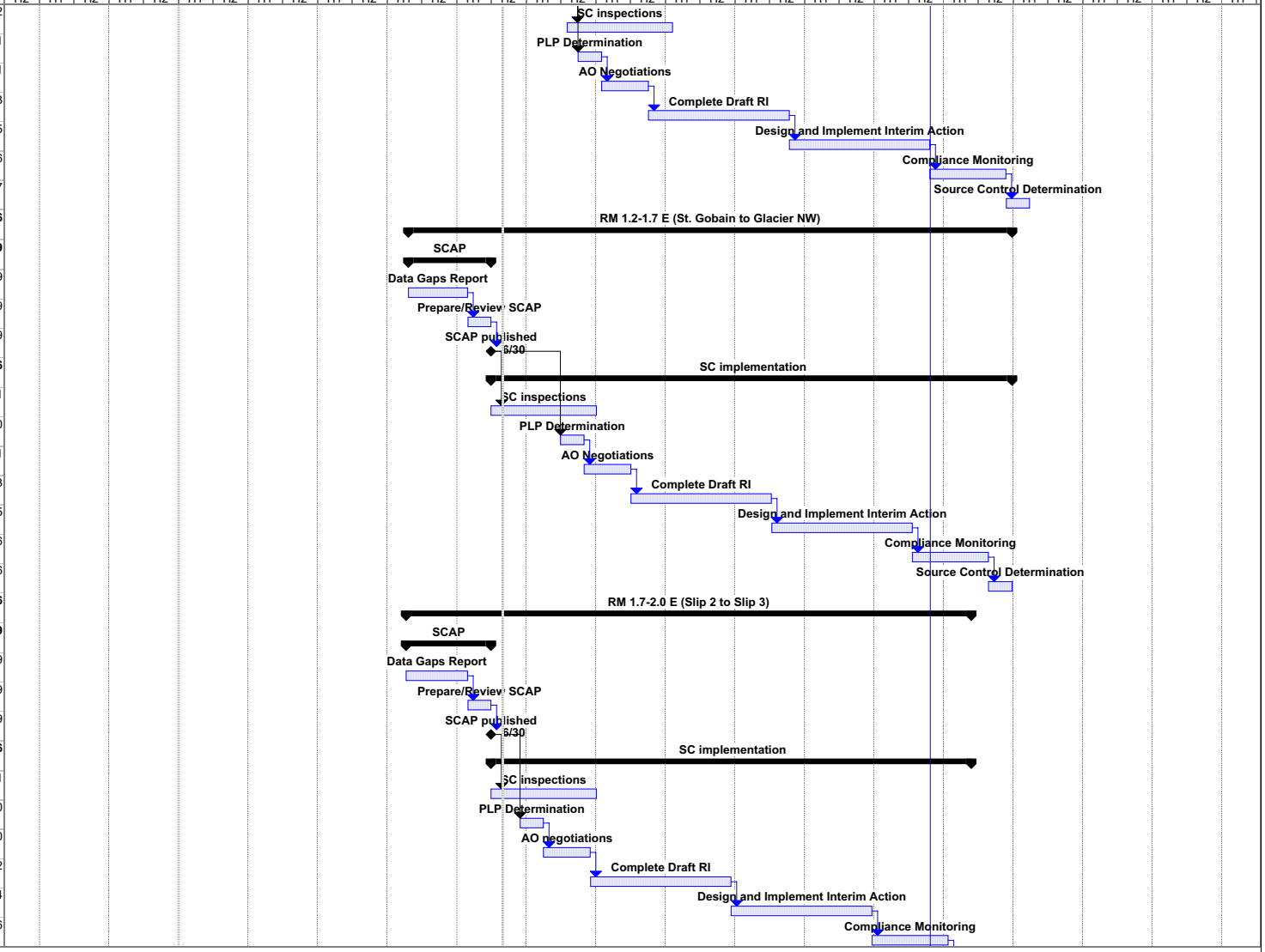
ID	Task Name	Start	Finish
96	**RM 0.0-0.1 E (Spokane St. to Ash Grove Cement)**	**Tue 4/15/08**	**Fri 2/26/16**
97	**SCAP**	**Tue 4/15/08**	**Tue 6/30/09**
98	Data Gaps Report	Tue 4/15/08	Wed 12/31/08
99	Prepare/Review SCAP	Thu 1/1/09	Tue 6/30/09
100	SCAP published	Tue 6/30/09	Tue 6/30/09
101	**SC implementation**	**Wed 7/1/09**	**Fri 2/26/16**
102	SC inspections	Wed 7/1/09	Wed 1/5/11
103	PLP Determination	Tue 9/1/09	Thu 12/31/09
104	AO negotiations	Fri 1/1/10	Fri 9/3/10
105	Complete Draft RI	Mon 9/6/10	Wed 9/12/12
106	Design and Implement Interim Action	Thu 9/13/12	Mon 9/22/14
107	Compliance Monitoring	Tue 9/23/14	Tue 10/27/15
108	Source Control Determination	Wed 10/28/15	Fri 2/26/16
109	**RM 0.9-1.0 E (Slip 1)**	**Wed 3/5/08**	**Thu 8/25/16**
110	**SCAP**	**Wed 3/5/08**	**Fri 5/29/09**
111	Data Gaps Report	Wed 3/5/08	Tue 8/26/08
112	Prepare/Review SCAP	Wed 8/27/08	Fri 5/29/09
113	SCAP published	Fri 5/29/09	Fri 5/29/09
114	**SC implementation**	**Mon 6/1/09**	**Thu 8/25/16**
115	SC inspections	Mon 6/1/09	Mon 12/6/10
116	PLP Determination	Mon 3/1/10	Wed 6/30/10
117	AO Negotiations	Thu 7/1/10	Thu 3/3/11
118	Complete Draft RI	Fri 3/4/11	Tue 3/12/13
119	Design and Implement Interim Action	Wed 3/13/13	Fri 3/20/15
120	Compliance Monitoring	Mon 3/23/15	Mon 4/25/16
121	Source Control Determination	Tue 4/26/16	Thu 8/25/16
122	**RM 1.0-1.2 E (KC Lease Parcels)**	**Tue 9/1/09**	**Wed 3/29/17**
123	**SCAP**	**Tue 9/1/09**	**Wed 8/4/10**
124	Data Gaps Report	Tue 9/1/09	Wed 3/3/10
125	Prepare/Review SCAP	Thu 3/4/10	Wed 8/4/10
126	SCAP published	Wed 8/4/10	Wed 8/4/10
127	**SC implementation**	**Thu 8/5/10**	**Wed 3/29/17**



Project: LDW SC functional level
Date: Fri 8/28/09

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External MileTask | Split

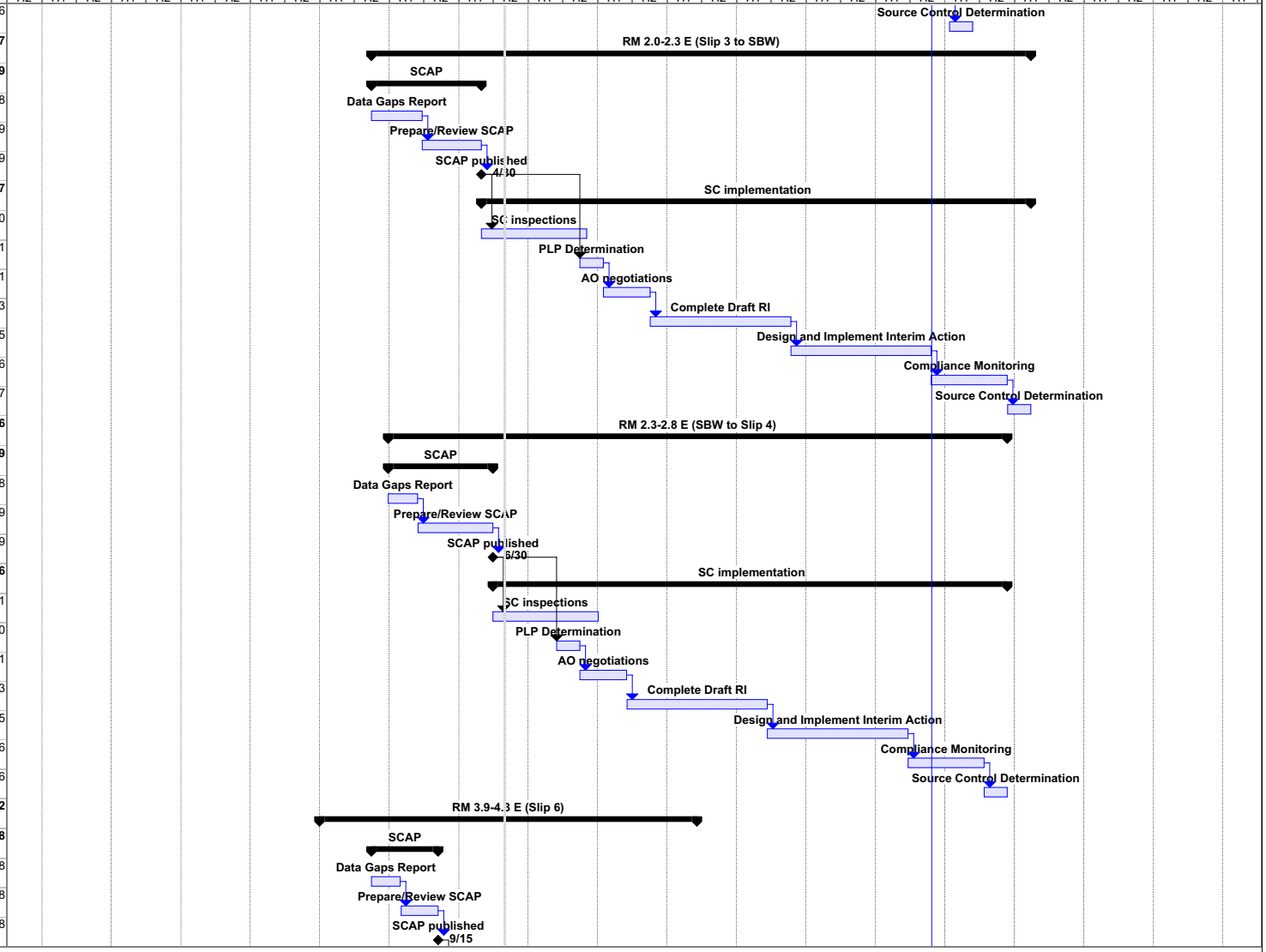
ID	Task Name	Start	Finish
128	SC inspections	Thu 8/5/10	Thu 2/9/12
129	PLP Determination	Fri 10/1/10	Tue 2/1/11
130	AO Negotiations	Wed 2/2/11	Wed 10/5/11
131	Complete Draft RI	Thu 10/6/11	Mon 10/14/13
132	Design and Implement Interim Action	Tue 10/15/13	Thu 10/22/15
133	Compliance Monitoring	Fri 10/23/15	Fri 11/25/16
134	Source Control Determination	Mon 11/28/16	Wed 3/29/17
135	**RM 1.2-1.7 E (St. Gobain to Glacier NW)**	**Wed 4/23/08**	**Tue 12/27/16**
136	**SCAP**	**Wed 4/23/08**	**Tue 6/30/09**
137	Data Gaps Report	Wed 4/23/08	Fri 2/27/09
138	Prepare/Review SCAP	Mon 3/2/09	Tue 6/30/09
139	SCAP published	Tue 6/30/09	Tue 6/30/09
140	**SC implementation**	**Wed 7/1/09**	**Tue 12/27/16**
141	SC inspections	Wed 7/1/09	Wed 1/5/11
142	PLP Determination	Thu 7/1/10	Mon 11/1/10
143	AO Negotiations	Tue 11/2/10	Tue 7/5/11
144	Complete Draft RI	Wed 7/6/11	Fri 7/12/13
145	Design and Implement Interim Action	Mon 7/15/13	Wed 7/22/15
146	Compliance Monitoring	Thu 7/23/15	Thu 8/25/16
147	Source Control Determination	Fri 8/26/16	Tue 12/27/16
148	**RM 1.7-2.0 E (Slip 2 to Slip 3)**	**Fri 4/11/08**	**Fri 5/27/16**
149	**SCAP**	**Fri 4/11/08**	**Tue 6/30/09**
150	Data Gaps Report	Fri 4/11/08	Fri 2/27/09
151	Prepare/Review SCAP	Mon 3/2/09	Tue 6/30/09
152	SCAP published	Tue 6/30/09	Tue 6/30/09
153	**SC implementation**	**Wed 7/1/09**	**Fri 5/27/16**
154	SC inspections	Wed 7/1/09	Wed 1/5/11
155	PLP Determination	Tue 12/1/09	Thu 4/1/10
156	AO negotiations	Fri 4/2/10	Fri 12/3/10
157	Complete Draft RI	Mon 12/6/10	Wed 12/12/12
158	Design and Implement Interim Action	Thu 12/13/12	Mon 12/22/14
159	Compliance Monitoring	Tue 12/23/14	Tue 1/26/16



Project: LDW SC functional level
Date: Fri 8/28/09

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External MileTask
Split

ID	Task Name	Start	Finish
160	Source Control Determination	Wed 1/27/16	Fri 5/27/16
161	**RM 2.0-2.3 E (Slip 3 to SBW)**	**Mon 10/1/07**	**Wed 3/29/17**
162	**SCAP**	**Mon 10/1/07**	**Thu 4/30/09**
163	Data Gaps Report	Mon 10/1/07	Mon 6/23/08
164	Prepare/Review SCAP	Tue 6/24/08	Thu 4/30/09
165	SCAP published	Thu 4/30/09	Thu 4/30/09
166	**SC implementation**	**Fri 5/1/09**	**Wed 3/29/17**
167	SC inspections	Fri 5/1/09	Fri 11/5/10
168	PLP Determination	Fri 10/1/10	Tue 2/1/11
169	AO negotiations	Wed 2/2/11	Wed 10/5/11
170	Complete Draft RI	Thu 10/6/11	Mon 10/14/13
171	Design and Implement Interim Action	Tue 10/15/13	Thu 10/22/15
172	Compliance Monitoring	Fri 10/23/15	Fri 11/25/16
173	Source Control Determination	Mon 11/28/16	Wed 3/29/17
174	**RM 2.3-2.8 E (SBW to Slip 4)**	**Fri 12/28/07**	**Fri 11/25/16**
175	**SCAP**	**Fri 12/28/07**	**Tue 6/30/09**
176	Data Gaps Report	Fri 12/28/07	Fri 5/30/08
177	Prepare/Review SCAP	Mon 6/2/08	Tue 6/30/09
178	SCAP published	Tue 6/30/09	Tue 6/30/09
179	**SC implementation**	**Wed 7/1/09**	**Fri 11/25/16**
180	SC inspections	Wed 7/1/09	Wed 1/5/11
181	PLP Determination	Tue 6/1/10	Thu 9/30/10
182	AO negotiations	Fri 10/1/10	Fri 6/3/11
183	Complete Draft RI	Mon 6/6/11	Wed 6/12/13
184	Design and Implement Interim Action	Thu 6/13/13	Mon 6/22/15
185	Compliance Monitoring	Tue 6/23/15	Tue 7/26/16
186	Source Control Determination	Wed 7/27/16	Fri 11/25/16
187	**RM 3.9-4.3 E (Slip 6)**	**Mon 1/1/07**	**Thu 6/7/12**
188	**SCAP**	**Mon 10/1/07**	**Mon 9/15/08**
189	Data Gaps Report	Mon 10/1/07	Thu 2/28/08
190	Prepare/Review SCAP	Wed 3/5/08	Mon 9/15/08
191	SCAP published	Mon 9/15/08	Mon 9/15/08



Project: LDW SC functional level
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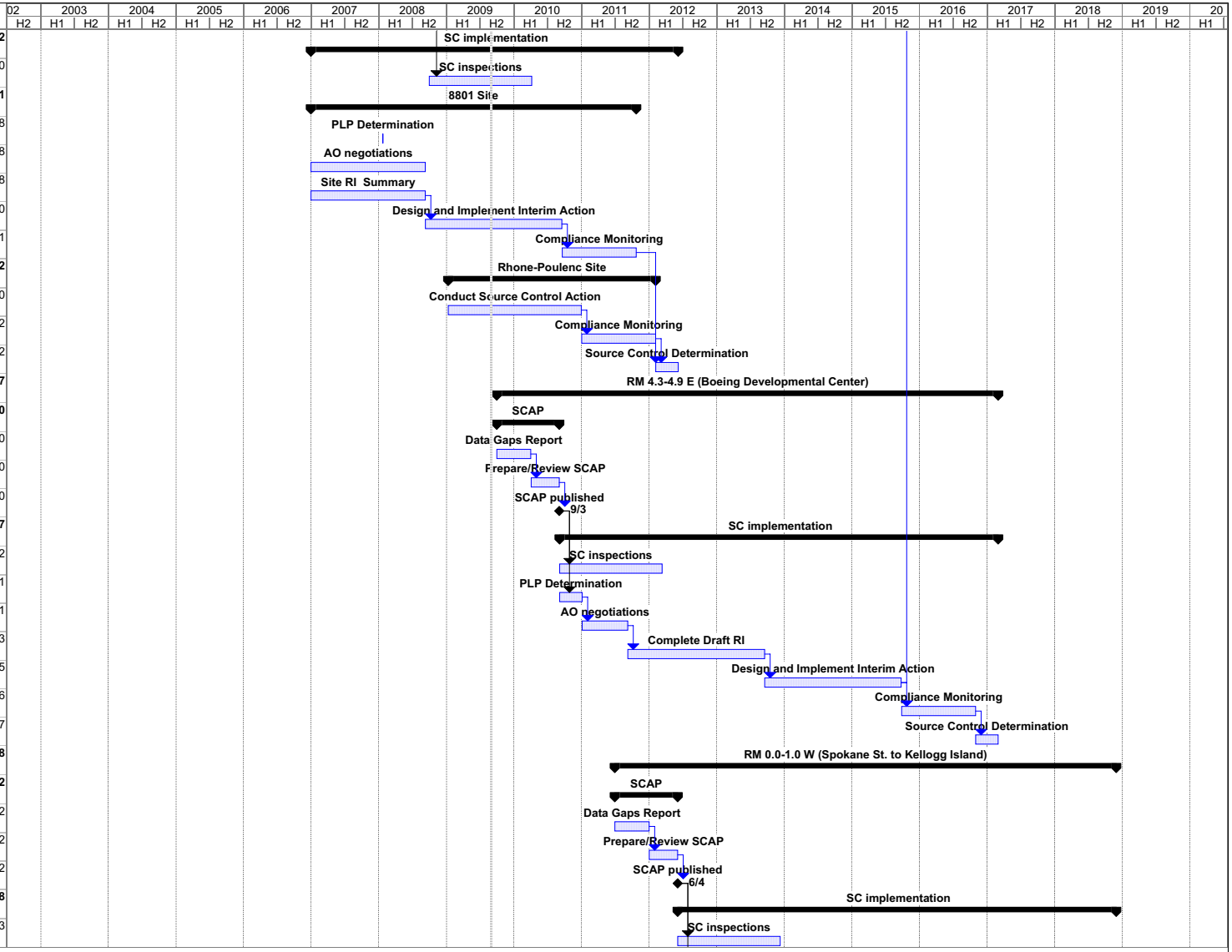
Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External MileTask | Split

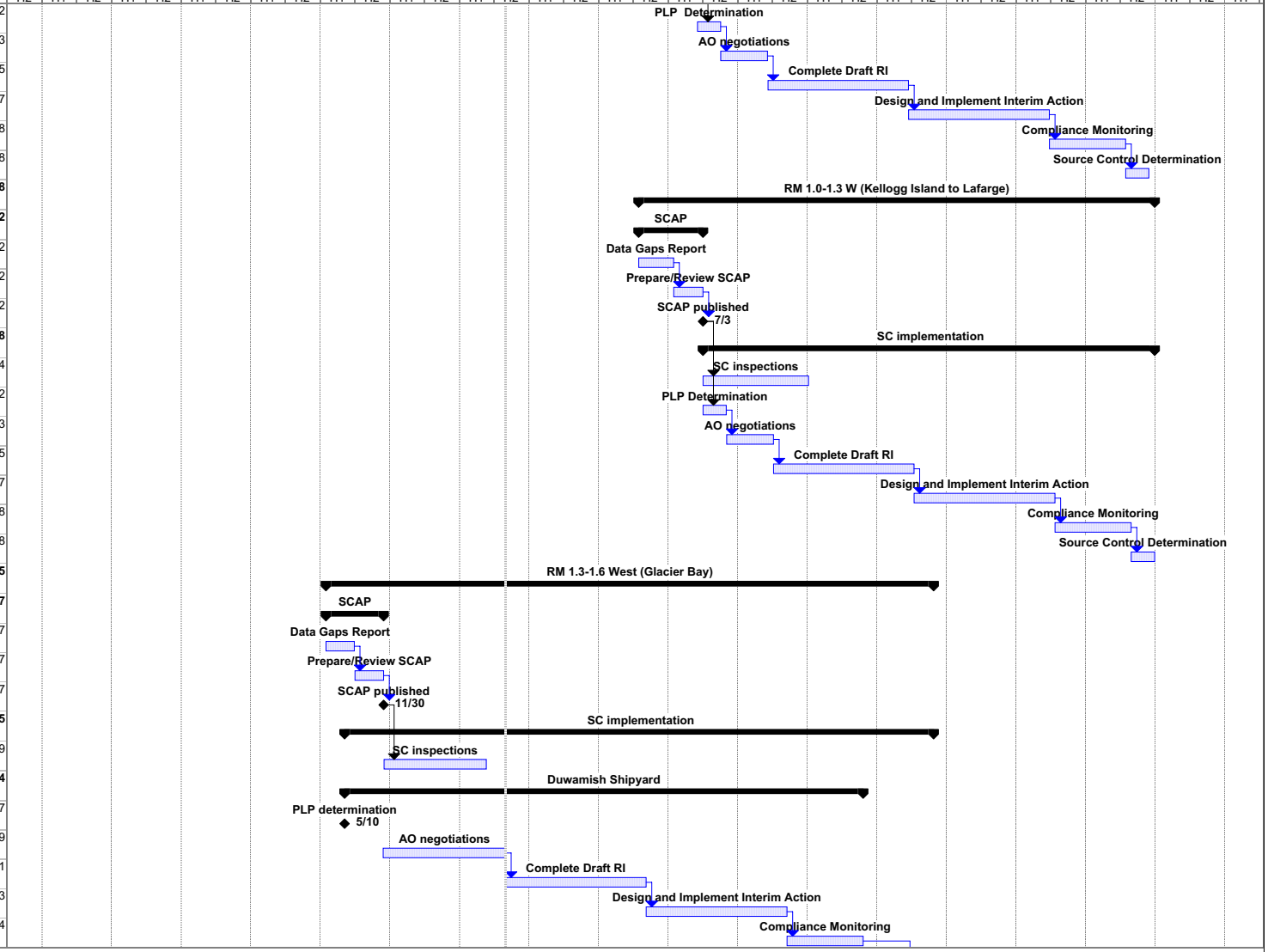
ID	Task Name	Start	Finish
192	**SC implementation**	**Mon 1/1/07**	**Thu 6/7/12**
193	SC inspections	Wed 10/1/08	Wed 4/7/10
194	**8801 Site**	**Mon 1/1/07**	**Mon 10/24/11**
195	PLP Determination	Thu 1/24/08	Thu 1/24/08
196	AO negotiations	Mon 1/1/07	Tue 9/9/08
197	Site RI Summary	Mon 1/1/07	Tue 9/9/08
198	Design and Implement Interim Action	Wed 9/10/08	Fri 9/17/10
199	Compliance Monitoring	Mon 9/20/10	Mon 10/24/11
200	**Rhone-Poulenc Site**	**Mon 1/12/09**	**Mon 2/6/12**
201	Conduct Source Control Action	Mon 1/12/09	Fri 12/31/10
202	Compliance Monitoring	Mon 1/3/11	Mon 2/6/12
203	Source Control Determination	Tue 2/7/12	Thu 6/7/12
204	**RM 4.3-4.9 E (Boeing Developmental Center)**	**Thu 10/1/09**	**Thu 3/2/17**
205	**SCAP**	**Thu 10/1/09**	**Fri 9/3/10**
206	Data Gaps Report	Thu 10/1/09	Fri 4/2/10
207	Prepare/Review SCAP	Mon 4/5/10	Fri 9/3/10
208	SCAP published	Fri 9/3/10	Fri 9/3/10
209	**SC implementation**	**Mon 9/6/10**	**Thu 3/2/17**
210	SC inspections	Mon 9/6/10	Mon 3/12/12
211	PLP Determination	Mon 9/6/10	Wed 1/5/11
212	AO negotiations	Thu 1/6/11	Thu 9/8/11
213	Complete Draft RI	Fri 9/9/11	Tue 9/17/13
214	Design and Implement Interim Action	Wed 9/18/13	Fri 9/25/15
215	Compliance Monitoring	Mon 9/28/15	Mon 10/31/16
216	Source Control Determination	Tue 11/1/16	Thu 3/2/17
217	**RM 0.0-1.0 W (Spokane St. to Kellogg Island)**	**Fri 7/1/11**	**Fri 11/30/18**
218	**SCAP**	**Fri 7/1/11**	**Mon 6/4/12**
219	Data Gaps Report	Fri 7/1/11	Mon 1/2/12
220	Prepare/Review SCAP	Tue 1/3/12	Mon 6/4/12
221	SCAP published	Mon 6/4/12	Mon 6/4/12
222	**SC implementation**	**Tue 6/5/12**	**Fri 11/30/18**
223	SC inspections	Tue 6/5/12	Tue 12/10/13



Project: LDW SC functional level
Date: Fri 8/28/09

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External MileTask | Split

ID	Task Name	Start	Finish
224	PLP Determination	Tue 6/5/12	Thu 10/4/12
225	AO negotiations	Fri 10/5/12	Fri 6/7/13
226	Complete Draft RI	Mon 6/10/13	Wed 6/17/15
227	Design and Implement Interim Action	Thu 6/18/15	Mon 6/26/17
228	Compliance Monitoring	Tue 6/27/17	Tue 7/31/18
229	Source Control Determination	Wed 8/1/18	Fri 11/30/18
230	**RM 1.0-1.3 W (Kellogg Island to Lafarge)**	**Mon 8/1/11**	**Mon 12/31/18**
231	**SCAP**	**Mon 8/1/11**	**Tue 7/3/12**
232	Data Gaps Report	Mon 8/1/11	Tue 1/31/12
233	Prepare/Review SCAP	Wed 2/1/12	Tue 7/3/12
234	SCAP published	Tue 7/3/12	Tue 7/3/12
235	**SC implementation**	**Wed 7/4/12**	**Mon 12/31/18**
236	SC inspections	Wed 7/4/12	Wed 1/8/14
237	PLP Determination	Wed 7/4/12	Fri 11/2/12
238	AO negotiations	Mon 11/5/12	Mon 7/8/13
239	Complete Draft RI	Tue 7/9/13	Thu 7/16/15
240	Design and Implement Interim Action	Fri 7/17/15	Tue 7/25/17
241	Compliance Monitoring	Wed 7/26/17	Wed 8/29/18
242	Source Control Determination	Thu 8/30/18	Mon 12/31/18
243	**RM 1.3-1.6 West (Glacier Bay)**	**Thu 2/1/07**	**Tue 10/27/15**
244	**SCAP**	**Thu 2/1/07**	**Fri 11/30/07**
245	Data Gaps Report	Thu 2/1/07	Fri 6/29/07
246	Prepare/Review SCAP	Tue 7/3/07	Fri 11/30/07
247	SCAP published	Fri 11/30/07	Fri 11/30/07
248	**SC implementation**	**Thu 5/10/07**	**Tue 10/27/15**
249	SC inspections	Mon 12/3/07	Fri 5/22/09
250	**Duwamish Shipyard**	**Thu 5/10/07**	**Wed 10/22/14**
251	PLP determination	Thu 5/10/07	Thu 5/10/07
252	AO negotiations	Wed 11/28/07	Mon 8/31/09
253	Complete Draft RI	Tue 9/1/09	Thu 9/8/11
254	Design and Implement Interim Action	Fri 9/9/11	Tue 9/17/13
255	Compliance Monitoring	Wed 9/18/13	Wed 10/22/14



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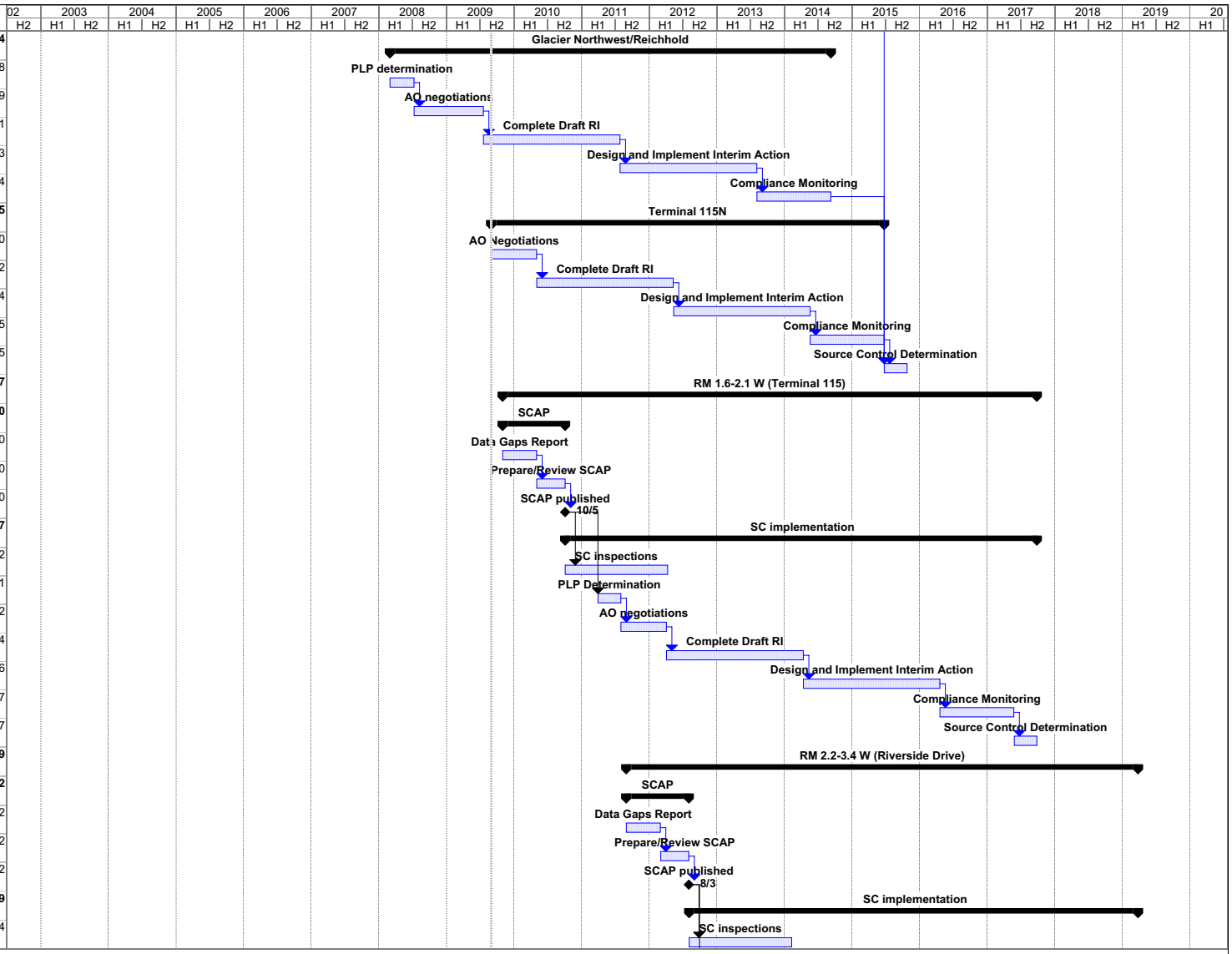
ID	Task Name	Start	Finish
256	**Glacier Northwest/Reichhold**	**Mon 3/3/08**	**Wed 9/10/14**
257	PLP determination	Mon 3/3/08	Thu 7/10/08
258	AO negotiations	Fri 7/11/08	Mon 7/20/09
259	Complete Draft RI	Tue 7/21/09	Thu 7/28/11
260	Design and Implement Interim Action	Fri 7/29/11	Tue 8/6/13
261	Compliance Monitoring	Wed 8/7/13	Wed 9/10/14
262	**Terminal 115N**	**Tue 9/1/09**	**Thu 6/25/15**
263	AO Negotiations	Tue 9/1/09	Tue 5/4/10
264	Complete Draft RI	Wed 5/5/10	Fri 5/11/12
265	Design and Implement Interim Action	Mon 5/14/12	Wed 5/21/14
266	Compliance Monitoring	Thu 5/22/14	Thu 6/25/15
267	Source Control Determination	Fri 6/26/15	Tue 10/27/15
268	**RM 1.6-2.1 W (Terminal 115)**	**Mon 11/2/09**	**Wed 9/27/17**
269	**SCAP**	**Mon 11/2/09**	**Tue 10/5/10**
270	Data Gaps Report	Mon 11/2/09	Tue 5/4/10
271	Prepare/Review SCAP	Wed 5/5/10	Tue 10/5/10
272	SCAP published	Tue 10/5/10	Tue 10/5/10
273	**SC implementation**	**Wed 10/6/10**	**Wed 9/27/17**
274	SC inspections	Wed 10/6/10	Wed 4/11/12
275	PLP Determination	Fri 4/1/11	Tue 8/2/11
276	AO negotiations	Wed 8/3/11	Wed 4/4/12
277	Complete Draft RI	Thu 4/5/12	Mon 4/14/14
278	Design and Implement Interim Action	Tue 4/15/14	Thu 4/21/16
279	Compliance Monitoring	Fri 4/22/16	Fri 5/26/17
280	Source Control Determination	Mon 5/29/17	Wed 9/27/17
281	**RM 2.2-3.4 W (Riverside Drive)**	**Thu 9/1/11**	**Thu 3/28/19**
282	**SCAP**	**Thu 9/1/11**	**Fri 8/3/12**
283	Data Gaps Report	Thu 9/1/11	Fri 3/2/12
284	Prepare/Review SCAP	Mon 3/5/12	Fri 8/3/12
285	SCAP published	Fri 8/3/12	Fri 8/3/12
286	**SC implementation**	**Mon 8/6/12**	**Thu 3/28/19**
287	SC inspections	Mon 8/6/12	Mon 2/10/14



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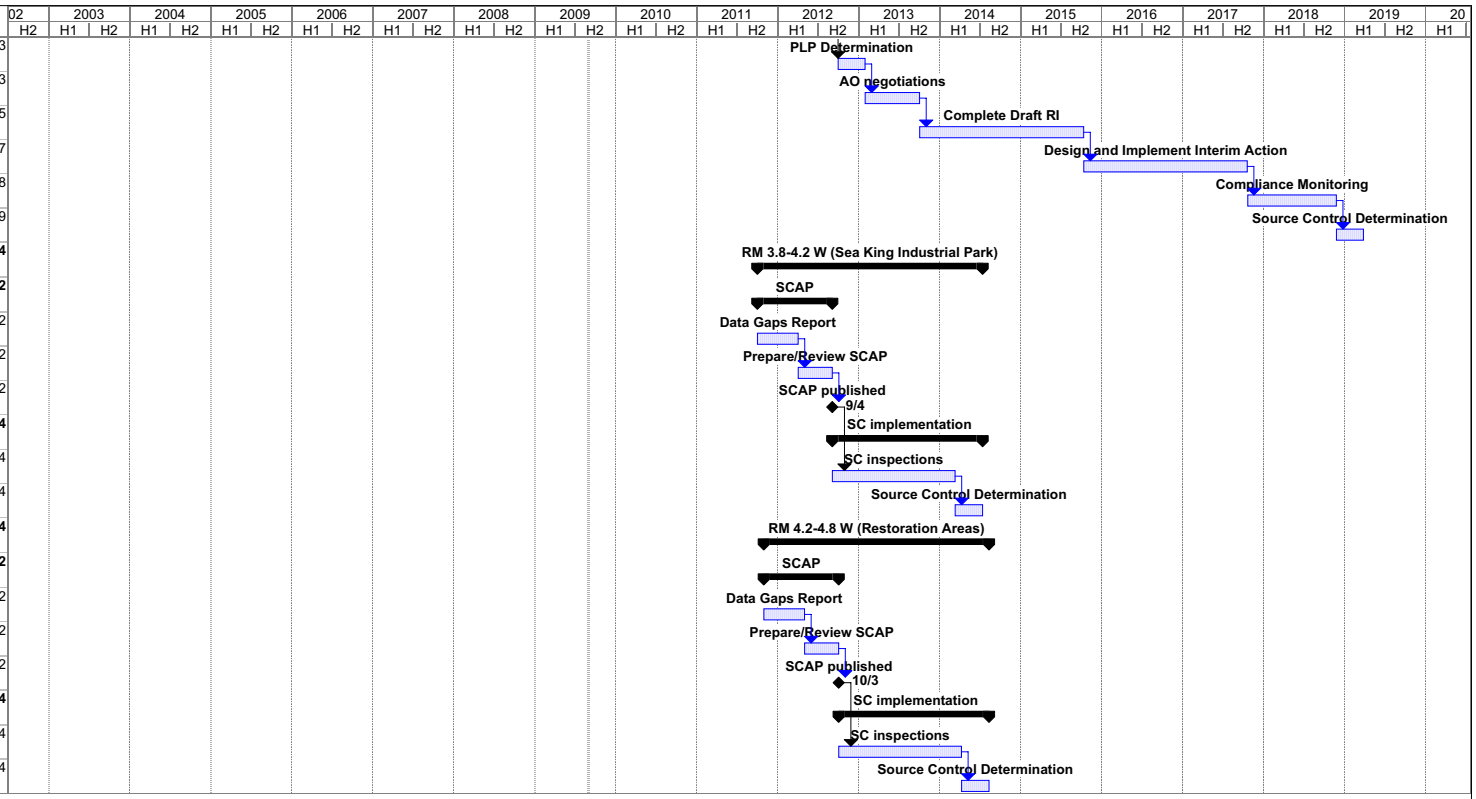
Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External MileTask | Split

ID	Task Name	Start	Finish
288	PLP Determination	Mon 10/1/12	Wed 1/30/13
289	AO negotiations	Thu 1/31/13	Thu 10/3/13
290	Complete Draft RI	Fri 10/4/13	Tue 10/13/15
291	Design and Implement Interim Action	Wed 10/14/15	Fri 10/20/17
292	Compliance Monitoring	Mon 10/23/17	Mon 11/26/18
293	Source Control Determination	Tue 11/27/18	Thu 3/28/19
294	**RM 3.8-4.2 W (Sea King Industrial Park)**	**Mon 10/3/11**	**Mon 7/14/14**
295	**SCAP**	**Mon 10/3/11**	**Tue 9/4/12**
296	Data Gaps Report	Mon 10/3/11	Tue 4/3/12
297	Prepare/Review SCAP	Wed 4/4/12	Tue 9/4/12
298	SCAP published	Tue 9/4/12	Tue 9/4/12
299	**SC implementation**	**Wed 9/5/12**	**Mon 7/14/14**
300	SC inspections	Wed 9/5/12	Wed 3/12/14
301	Source Control Determination	Thu 3/13/14	Mon 7/14/14
302	**RM 4.2-4.8 W (Restoration Areas)**	**Tue 11/1/11**	**Tue 8/12/14**
303	**SCAP**	**Tue 11/1/11**	**Wed 10/3/12**
304	Data Gaps Report	Tue 11/1/11	Wed 5/2/12
305	Prepare/Review SCAP	Thu 5/3/12	Wed 10/3/12
306	SCAP published	Wed 10/3/12	Wed 10/3/12
307	**SC implementation**	**Thu 10/4/12**	**Tue 8/12/14**
308	SC inspections	Thu 10/4/12	Thu 4/10/14
309	Source Control Determination	Fri 4/11/14	Tue 8/12/14



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Appendix B
SPU Inspections
September 2008 through June 2009

Appendix B: SPU Source Control Inspections (September 2008 through June 2009)

Facility	Address	Date Inspected	Inspection Type	Inspector	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
7th Ave S SD										
Fabrication Specialties Limited Art	527 S Portland St	5/6/2009	Initial	Robinson	Y	0	0	0	0	0
Portable Sheds of America	7510 5th Ave S	4/22/2009	Initial	Wisdom	N	6	2	0	3	1
Westeel Company	8001 7th Ave S	6/10/2009	Initial	Robinson	Y	0	0	0	0	0
Diagonal CSO										
Skeeter's Auto Rebuild, Inc.	2104 S Plum St	6/3/2009	Followup	Autry	N	7	1	0	3	3
U-Haul Center of Rainier	2515 Rainier Ave S	3/4/2009	Initial	Autry	N	8	0	0	4	4
Diagonal SD										
All City Fence Co.	36 S Hudson St	2/23/2009	Initial	Robinson	--	4	0	0	3	1
All City Fence Co.	36 S Hudson St	6/18/2009	Followup	Robinson	Y					
ConGlobal Industries	1 S Idaho St	4/9/2009	Initial	Wisdom	--	21	7	2	4	8
ConGlobal Industries	1 S Idaho St	6/3/2009	Followup	Wisdom	N					
First Choice Detail & Hand Car Wash	2507 Beacon Ave S	5/7/2009	Initial	Autry	--	4	0	0	3	1
First Choice Detail & Hand Car Wash	2507 Beacon Ave S	5/8/2009	Followup	Autry	N					
Global Fulfillment		11/20/2008	Followup	Wisdom	Y	2	0	0	1	1
Lowe's Home Improvement Warehouse	2700 Rainier Ave S	9/23/2008	Initial	Wisdom	--	6	0	0	3	3
Lowe's Home Improvement Warehouse	2700 Rainier Ave S	12/4/2008	Followup	Wisdom	Y					
Lucky Seafood	3217 Beacon Ave S	9/25/2008	Initial	Autry	Y	1	0	0	0	1
MacMillan Piper Inc.	655 S Edmunds St	9/26/2008	Followup	Wisdom	--	21	4	0	8	17
MacMillan Piper Inc.	655 S Edmunds St	3/4/2009	Followup	Wisdom	Y					
North Star Casteel	3901 9th Ave S	10/9/2008	Followup	Wisdom	--	32	13	1	6	12
North Star Casteel	3901 9th Ave S	11/21/2008	Followup	Wisdom	--					
North Star Casteel	3901 9th Ave S	1/14/2009	Followup	Wisdom	--					
North Star Casteel	3901 9th Ave S	1/30/2009	Followup	Wisdom	N					
Oversea Casing Company	601 S Nevada	1/23/2009	Initial	Wisdom	--	3	0	1	1	1
Oversea Casing Company	601 S Nevada	3/6/2009	Followup	Wisdom	Y					
Recycling Depot	851 Rainier Ave S	2/4/2009	Initial	Autry	--	6	0	0	3	3
Recycling Depot	851 Rainier Ave S	5/7/2009	Followup	Autry	Y					
Safelite Glass Corp	665 S Dakota St	9/19/2008	Followup	Wisdom	Y					
Seattle Barrel Company	4716 Airport Wy S	9/10/2008	Initial	Jeffers/ECY	--					
Seattle Barrel Company	4716 Airport Wy S	10/23/2008	Followup	Jeffers/ECY	--					
Seattle Barrel Company	4716 Airport Wy S	2/9/2009	Initial	Robinson	N	31	6	2	8	15
Seattle City Light	3613 4th Ave S	3/3/2009	Initial	Robinson	N	4	1	0	0	3
Seattle Granite Countertops	4700 Ohio Ave S, #A	9/17/2008	Followup	Wisdom	--					
Seattle Granite Countertops	4700 Ohio Ave S, #A	2/19/2009	Initial	Robinson	--	7	0	0	3	4
Seattle Granite Countertops	4700 Ohio Ave S, #A	4/21/2009	Followup	Robinson	Y					
Stusser Electric Co.	660 S Andover St	12/5/2008	Initial	Robinson	--	9	1	0	4	4

Appendix B: SPU Source Control Inspections (September 2008 through June 2009)

Facility	Address	Date Inspected	Inspection Type	Inspector	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Stusser Electric Co.	660 S Andover St	1/29/2009	Followup	Robinson	Y					
Lake Washington South										
Darigold	4058 Rainier Ave S	2/10/2009	Followup	Autry	Y	0	0	0	0	0
Duwamish (NEC) CSO										
CDL Recycle LLC	7201 E Marginal Wy S	6/30/2009	Initial	Robinson	N	2	0	0	0	2
Cleanscapes	5935 4th Ave S	11/13/2008	Followup	Wisdom	Y					
Donut Factory LLC	6560 5th Ave S	3/12/2009	Initial	Autry	--	7	4	0	3	0
Donut Factory LLC	6560 5th Ave S	6/5/2009	Followup	Autry	Y					
Evergreen Tractor	164 S Michigan St	3/25/2009	Initial	Jeffers/ECY	Y					
Impression Printing	222 S Lucile St	12/31/2008	Initial	Robinson	--	5	1	0	3	1
Impression Printing	222 S Lucile St	3/17/2009	Followup	Robinson	Y					
Iridio		12/12/2008	Initial	Robinson	Y	1	0	0	1	0
Mobile Crane	5900 2nd Ave S	9/9/2008	Followup	Anderson	Y					
Shell Gas Station & Food Mart	6200 Corson Ave S	6/30/2009	Initial	Autry	N	2	0	0	2	0
Duwamish (NEC) SD										
Ace Tank and Fueling Equipment	6703 E Marginal Wy S	1/9/2009	Initial	Wisdom	--	3	1	0	1	1
Ace Tank and Fueling Equipment	6703 E Marginal Wy S	3/6/2009	Followup	Wisdom	--					
Ace Tank and Fueling Equipment	6703 E Marginal Wy S	4/14/2009	Followup	Wisdom	Y					
AIC International	736 S Chicago St	2/6/2009	Initial	Wisdom	--	5	2	0	3	0
AIC International	736 S Chicago St	3/18/2009	Followup	Wisdom	Y					
Algas-SDI International LLC	151 S Michigan St	10/2/2008	Initial	Wisdom	--	12	3	0	3	6
Algas-SDI International LLC	151 S Michigan St	11/14/2008	Followup	Wisdom	--					
Algas-SDI International LLC	151 S Michigan St	12/3/2008	Followup	Wisdom	Y					
Alpine Auto Sales	6722 Fox Ave S	6/30/2009	Initial	Wisdom	N	15	6	0	3	6
Beckwith and Kuffel Inc.	5930 1st Ave S	1/14/2009	Initial	Wisdom	--	2	1	0	0	1
Beckwith and Kuffel Inc.	5930 1st Ave S	3/6/2009	Followup	Wisdom	Y					
Certainteed Gypsum	5931 E Marginal Wy S	5/12/2009	Initial	Robinson	N	5	1	0	1	3
Commercial Floor Distributors Inc.	210 S River St	6/18/2009	Initial	Wisdom	N	5	0	0	3	2
Dawn Food Products	6901 Fox Ave S	9/5/2008	Initial	Wisdom	--	4	0	0	1	3
Dawn Food Products	6901 Fox Ave S	10/31/2008	Followup	Wisdom	--					
Dawn Food Products	6901 Fox Ave S	11/12/2008	Followup	Wisdom	Y					
Duwamish Metal Fabrication	16 S Michigan St	10/23/2008	Followup	Robinson	Y					
Fog Tite Inc	4819 W Marginal Wy SW	3/24/2009	Initial	Robinson	--	5	0	1	3	1
Fog Tite Inc	4819 W Marginal Wy SW	4/29/2009	Followup	Robinson	--					
Fog Tite Inc	4819 W Marginal Wy SW	5/7/2009	Followup	Robinson	N					
J.A. Jack & Sons, Inc.	5427 Ohio Ave S	1/29/2009	Initial	Wisdom	--	2	1	0	1	0
J.A. Jack & Sons, Inc.	5427 Ohio Ave S	4/23/2009	Followup	Wisdom	Y					

Appendix B: SPU Source Control Inspections (September 2008 through June 2009)

Facility	Address	Date Inspected	Inspection Type	Inspector	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Jon's Recycling	7620 2nd Ave S	10/6/2008	Followup	Robinson	Y					
King Electrical Mfg. Company	9131 10th Ave S	10/3/2008	Initial	Wisdom	--	17	6	2	3	6
King Electrical Mfg. Company	9131 10th Ave S	10/17/2008	Followup	Wisdom	--					
King Electrical Mfg. Company	9131 10th Ave S	11/21/2008	Followup	Wisdom	--					
King Electrical Mfg. Company	9131 10th Ave S	2/12/2009	Followup	Wisdom	Y					
LVI Environmental Services Inc.	5409 Ohio Ave S	1/14/2009	Initial	Wisdom	--	3	1	0	2	0
LVI Environmental Services Inc.	5409 Ohio Ave S	2/20/2009	Followup	Wisdom	Y					
Northland Services	6701 Fox Ave S	4/30/2009	Initial	Wisdom	N	8	4	0	1	3
Railworks Comstock	6533 3rd Ave S	9/25/2008	Initial	Wisdom	--	2	0	0	2	0
Railworks Comstock	6533 3rd Ave S	11/14/2008	Followup	Wisdom	Y					
Rosella's Fruit and Produce Co, Inc.	6731 E Marginal Wy S	4/15/2009	Initial	Wisdom	--	3	0	0	3	0
Rosella's Fruit and Produce Co, Inc.	6731 E Marginal Wy S	6/3/2009	Followup	Anderson	Y					
Samson Tug and Barge	6361 1st Ave S	10/23/2008	Followup	Robinson	Y					
SCS Refrigerated Services	303 S River St	3/6/2009	Initial	Wisdom	--	6	1	0	3	2
SCS Refrigerated Services	303 S River St	5/22/2009	Followup	Wisdom	Y					
Seaport Steel	3660 E Marginal Wy S	12/11/2008	Initial	Robinson	--	10	3	0	4	3
Seaport Steel	3660 E Marginal Wy S	3/12/2009	Followup	Robinson	--					
Seaport Steel	3660 E Marginal Wy S	4/23/2009	Followup	Robinson	Y					
Seatac Marine Services LLC	6701 Fox Ave S	4/23/2009	Initial	Megan Wisdom	N	7	3	0	2	2
Seattle Distribution Center	6701 E Marginal Wy S	3/18/2009	Initial	Wisdom	--	1	0	0	0	1
Seattle Distribution Center	6701 E Marginal Wy S	5/22/2009	Followup	Wisdom	--					
Seattle Distribution Center	6701 E Marginal Wy S	6/4/2009	Followup	Wisdom	N					
Seattle Iron & Metals Corp.	601 S Myrtle St	1/30/2009	Initial	Brian Robinson	N	4	0	0	1	3
Svendsen Brothers Fish Company	745 S Myrtle St	9/17/2008	Followup	Wisdom	Y					
Taxi King	720 S Orchard	9/19/2008	Followup	Wisdom	Y					
Toth Construction	6506 2nd Ave S	9/25/2008	Initial	Wisdom	N	5	1	0	3	1
United Rentals	7135 8th Ave S	3/6/2009	Initial	Wisdom	--	7	2	0	2	3
United Rentals	7135 8th Ave S	5/5/2009	Followup	Wisdom	Y					
US Printing	6501 E Marginal Wy S	6/10/2009	Initial	Wisdom	--	3	0	0	3	0
US Printing	6501 E Marginal Wy S	6/23/2009	Followup	Anderson	Y					
V.Van Dyke, Inc.	150 S River St	3/19/2009	Initial	Wisdom	--	8	2	0	1	5
V.Van Dyke, Inc.	150 S River St	5/5/2009	Followup	Wisdom	Y					
Norfolk SD										
Ohno Construction Company	9416 Martin Luther King Jr Wy S	2/2/2009	Initial	Autry	--	12	3	0	3	6
Ohno Construction Company	9416 Martin Luther King Jr Wy S	3/13/2009	Followup	Autry	Y					
Slip 4										
Envelope Converting Service	6603 Ursula Ave S	9/4/2008	Initial	Wisdom	--	5	0	0	4	1

Appendix B: SPU Source Control Inspections (September 2008 through June 2009)

Facility	Address	Date Inspected	Inspection Type	Inspector	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Envelope Converting Service	6603 Ursula Ave S	12/5/2008	Followup	Wisdom	--					
Envelope Converting Service	6603 Ursula Ave S	1/5/2009	Followup	Wisdom	Y					
Essential Baking Company	1001 S Myrtle St	6/16/2009	Initial	Wisdom	N	4	0	0	3	1
Jensen Family LTD Partners	1001 S Myrtle St	6/16/2009	Initial	Wisdom	N	2	0	0	0	2
SFD - Fire Station # 27	1000 S Myrtle St	6/16/2009	Initial	Wisdom	N	1	0	0	0	1
South Park										
Hillside Elevators Inc.	640 S Riverside Dr	3/19/2009	Screening	Robinson	--					
Industrial Tire Service	540 S Holden St	10/6/2008	Initial	Robinson	--	6	1	0	3	2
Industrial Tire Service	540 S Holden St	11/18/2008	Followup	Robinson	Y					
Marine Lumber Service	525 S Chicago St	3/24/2009	Initial	Robinson	--	1	0	0	0	1
Marine Lumber Service	525 S Chicago St	3/27/2009	Followup	Robinson	--					
Marine Lumber Service	525 S Chicago St	6/26/2009	Followup	Robinson	N					
Modern Coach/Modern Pattern	7601 5th Ave S	4/22/2009	Initial	Wisdom	N	3	0	0	0	3
National Products Inc	8410 Dallas Ave S	9/17/2008	Followup	Wisdom	--	8	3	0	3	2
National Products Inc	8410 Dallas Ave S	10/10/2008	Followup	Wisdom	Y					
Northwind Marine	605 S Riverside Dr	4/16/2009	Initial	Wisdom	--	7	3	0	0	4
Northwind Marine	605 S Riverside Dr	6/5/2009	Followup	Wisdom	Y					
Phil's Custom Bindery	309 S Cloverdale St, #A-12	1/23/2009	Initial	Wisdom	--	4	1	0	3	0
Phil's Custom Bindery	309 S Cloverdale St, #A-12	3/6/2009	Followup	Wisdom	Y					
Pro Fab Inc.	640 S Riverside Dr	3/19/2009	Initial	Robinson	Y	0	0	0	0	0
Seattle Heat Treaters	521 S Holden St	2/19/2009	Initial	Robinson	Y	0	0	0	0	0
Smith Berger Marine Inc.	7915 10th Ave S	2/27/2009	Initial	Wisdom	--	6	1	0	3	2
Smith Berger Marine Inc.	7915 10th Ave S	5/21/2009	Followup	Wisdom	Y					
Trotsky										
Industrial Battery Systems	211 S Austin St	10/6/2008	Followup	Robinson	Y					

HW - Hazardous Waste
IW - Industrial Waste
SP - Spill Prevention
SW - Stormwater

Appendix C
Ecology Inspections
September 2008 through June 2009

Appendix C: Ecology Source Contol Inspections (September 2008 through June 2009)[1]

NPDES Permit ID	Facility	Address	City	Date Inspected	In Compliance?	Lead Inspector
NA	ABM Janitorial Services Northwest Inc.	1711 S Jackson Street	Seattle	April 6, 2009	Y	Ecology (Jeffers)
NA	Alaska Logistics	7400 8th Ave. S.	Seattle	June 24, 2008		
NA	Algas SDI International LLC	151 S Michigan Street	Seattle	January 21, 2009		Ecology (Wright)
NA	Allied Body Works	625 S 96th Street	Seattle	October 6, 2008		
NA	Allied Body Works	625 S 96th Street	Seattle	March 25, 2009		
NA	American Motor Freight, LLC	5700-6th Avenue S	Seattle	April 15, 2009	Y	Ecology (Jeffers)
NA	American Plastic Manufacturing Inc.	526 S Monroe Street	Seattle	June 10, 2009		Ecology (Jeffers)
NA	AMF Metals, LLC	5005 Ohio Avenue S	Seattle	December 11, 2008	Y	Ecology (Jeffers)
NA	Ash Grove Cement Co.	3801 East Marginal Way S	Seattle	January 14, 2009		Ecology (Wright)
NA	Atlas Supply Co.	611 S Charlestown Street	Seattle	February 18, 2009	Y	Ecology (Jeffers)
NA	B&G Machine, Inc.	11 S Nevada Street	Seattle	October 22, 2008	Y	
NA	Big Building LLC	3600 East Marginal Way S	Seattle	March 19, 2009		SPU (Wisdom)
NA	Blaser Die Casting	5700-3rd Avenue S	Seattle	April 15, 2009		Ecology (Jeffers)
NA	Cascade Designs	4000-1st Avenue S	Seattle	April 15, 2009		Ecology (Jeffers)
NA	Cascade Machinery & Electric, Inc.	4600 East Marginal Way S	Seattle	December 11, 2008		Ecology (Jeffers)
NA	Cascade Machinery & Electric, Inc.	4600 East Marginal Way S	Seattle	April 6, 2009		
NA	CleanScapes	7308-8th Avenue S	Seattle	June 16, 2009		Ecology (Jeffers)
NA	Clear Channel Outdoors	3601 6th Avenue S	Seattle	February 4, 2009	Y	Ecology (Jeffers)
NA	Collins Oil Co.	7800 Detroit Avenue SW	Seattle	June 3, 2009		Ecology (Jeffers)
NA	ConGlobal Inc.	1 S Idaho Street	Seattle	April 9, 2009		SPU (Wisdom)
NA	Costco Wholesale Co.	4401 4th Avenue S	Seattle	February 26, 2009	Y	Ecology (Jeffers)
NA	CRJ Construction Co.	9587 8th Avenue S	Seattle	February 26, 2009		Ecology (Jeffers)
NA	CRJ Construction Co.	9587 8th Avenue S	Seattle	May 13, 2009		
NA	Custom Metal Spinning LLC	9330 15th Avenue S, Unit C	Seattle	January 26, 2009		Ecology (Jeffers)
NA	Dawn Food Products, Inc.	6901 Fox Avenue S	Seattle	February 5, 2009		Ecology (Wright)
WAG030091C	Delta Marine Industries Inc	1608 S. 96th St.	Seattle	October 2, 2008		
WAG030091C	Delta Marine Industries Inc	1608 S. 96th St.	Seattle	February 24, 2009		Ecology (Best)
NA	Diamond Painting, LLC	1818 S. 93rd St.	Seattle	October 2, 2008		
NA	Evergreen Tractor LLC	164 S Michigan Street	Seattle	March 25, 2009	Y	Ecology (Jeffers)
NA	FedEx Ground BFIA Station	651 S Alaska Street	Seattle	January 14, 2009	Y	Ecology (Jeffers)
NA	Fiberlay, Inc.	24 S Idaho Street	Seattle	October 22, 2008	Y	
NA	Flamespray Northwest Inc.	250 S Chicago Street	Seattle	April 23, 2009		Ecology (Jeffers)
NA	Front Panel Express LLC	5959 Corson Avenue S, Suite I	Seattle	December 11, 2008	Y	Ecology (Jeffers)
NA	Fryer-Knowles Inc.	205 S Dawson Street	Seattle	April 6, 2009		Ecology (Jeffers)
NA	Gary Merlino Construction Co., Inc.	9125 10th Avenue S	Seattle	December 4, 2008		Ecology (Jeffers)
NA	Gary Merlino Construction Co., Inc.	9125 10th Avenue S	Seattle	April 15, 2009	Y	
NA	General Biodiesel Inc.	4034 West Marginal Way SW	Seattle	May 20, 2009		Ecology (Wright)
NA	Glacier Northwest Inc.	5902 West Marginal Way SW	Seattle	May 20, 2009	Y	Ecology (Jeffers)
NA	Hedwall Architectural Iron	4755C S Colorado Avenue	Seattle	March 3, 2009		Ecology (Jeffers)

Appendix C: Ecology Source Contol Inspections (September 2008 through June 2009)[1]

NPDES Permit ID	Facility	Address	City	Date Inspected	In Compliance?	Lead Inspector
NA	Hedwall Architectural Iron	4755C S Colorado Avenue	Seattle	April 6, 2009	Y	
NA	Industrial Container Services	7152-1st Avenue S	Seattle	April 23, 2009		PSCAA (McAfee)
NA	International Leasing Co., Inc.	3801 7th Avenue S	Seattle	March 3, 2009	Y	Ecology (Jeffers)
NA	International Lubricants Inc.	7930 Occidental Avenue S	Seattle	March 10, 2009	Y	Ecology (Jeffers)
NA	Irish Foundry Inc.	45 S Spokane Street	Seattle	March 19, 2009		SPU (Wisdom)
NA	Johnson Industries, Inc.	1015 S Myrtle Street	Seattle	June 16, 2009	Y	Ecology (Jeffers)
NA	JV Constructors, Inc.	325 S Kenyon Street	Seattle	February 19, 2009	Y	Ecology (Jeffers)
NA	Kelly-Moore Paint Co.	6101 Airport Way S	Seattle	January 6, 2009	Y	Ecology (Jeffers)
NA	KJM Electric Co.	521 S Monroe Street	Seattle	October 29, 2008		Ecology (Jeffers)
NA	KJM Electric Co.	521 S Monroe Street	Seattle	January 26, 2009		
NA	KJM Electric Co.	521 S Monroe Street	Seattle	March 10, 2009		
NA	KJM Electric Co.	521 S Monroe Street	Seattle	April 7, 2009		
NA	Kleen Env. Technologies, Inc. (Allen Property?)	5955 West Marginal Way SW	Seattle	May 13, 2009		Ecology (Jeffers)
NA	Kohl & Madden	1017 S Myrtle Street	Seattle	June 16, 2009	Y	Ecology (Jeffers)
NA	Laboratory Corporation of America	550-17th Avenue, Ste. 300	Seattle	June 9, 2009		Ecology (Jeffers)
NA	Manson Construction and Engineering Co.	5209 East Marginal Way S	Seattle	June 10, 2009		Ecology (Jeffers)
NA	Marine Lumber Service, Inc.	525 S Chicago Street	Seattle	November 12, 2008	Y	
NA	McFabco Steel	635 S Elmgrove Street	Seattle	March 3, 2009		Ecology (Jeffers)
NA	McKinstry Co.	220 S Hudson Street	Seattle	November 12, 2008		
NA	Meeco Manufacturing Co., Inc.	12 S Idaho Street	Seattle	October 23, 2008		Ecology (Jeffers)
NA	Meeco Manufacturing Co., Inc.	12 S Idaho Street	Seattle	December 4, 2008		
NA	Meeco Manufacturing Co., Inc.	12 S Idaho Street	Seattle	January 6, 2009		
NA	Metal Lab, LLC	3433 Airport Way S	Seattle	October 29, 2008		
NA	Miller Paint Co.	5959 Corson Avenue S	Seattle	December 11, 2008	Y	Ecology (Jeffers)
NA	Modern Coach/Modern Pattern	255 S Austin Street	Seattle	April 22, 2009		SPU (Wisdom)
NA	Natus Medical, Inc.	5900-1st Avenue S	Seattle	April 22, 2009		Ecology (Jeffers)
NA	Northland Services, Inc.	6700 W Marginal Way SW	Seattle	January 21, 2009		Ecology (Jeffers)
NA	Northland Services, Inc.	6700 W Marginal Way SW	Seattle	April 2, 2009		
NA	Northwest Connecting Rod	1705 S 93rd Street, Unit F7	Seattle	December 10, 2008		Ecology (Jeffers)
NA	Northwest Connecting Rod	1705 S 93rd Street, Unit F7	Seattle	January 26, 2009	Y	
NA	Olsson Manufacturing, Inc.	525 S Elmgrove Street	Seattle	January 6, 2009		Ecology (Jeffers)
NA	Pacific Material Handling Solutions, Inc.	1313 S 96th Street	Seattle	April 28, 2009		Ecology (Stegman)
NA	Phelps Tire	2520 Airport Way S	Seattle	October 29, 2008	Y	
NA	Phelps Tire Co. Inc.	3922 7th Avenue S	Seattle	October 29, 2008	Y	
NA	Poppleton Electric & Machinery Co., Inc.	969 S Nebraska Street	Seattle	February 4, 2009		Ecology (Jeffers)
NA	Poppleton Electric & Machinery Co., Inc.	969 S Nebraska Street	Seattle	April 7, 2009	Y	
NA	Portable Storage of America, Inc.	7510-5th Avenue S	Seattle	April 22, 2009		SPU (Wisdom)
NA	Progressive Fastening, Inc.	837 S Director Street	Seattle	January 27, 2009		Ecology (Jeffers)
NA	Progressive Fastening, Inc.	837 S Director Street	Seattle	February 4, 2009		

Appendix C: Ecology Source Contol Inspections (September 2008 through June 2009)[1]

NPDES Permit ID	Facility	Address	City	Date Inspected	In Compliance?	Lead Inspector
NA	Progressive Fastening, Inc.	837 S Director Street	Seattle	March 25, 2009		
NA	Progressive Fastening, Inc.	837 S Director Street	Seattle	May 13, 2009		
NA	Puget Sound Energy Georgetown Base	6500 Ursula Avenue S	Seattle	March 10, 2009	Y	Ecology (Jeffers)
NA	Puget Sound Inst. Of Pathology	1001 Klickitat Avenue SW #205	Seattle	March 25, 2009		Ecology (Jeffers)
NA	Qual-Fab, Inc.	1705 S 93rd Street, Unit F11	Seattle	December 10, 2008	Y	Ecology (Jeffers)
NA	RMC Inc.	10766 Myers Way S	Seattle	March 10, 2009		Ecology (Jeffers)
NA	RMC Inc.	10766 Myers Way S	Seattle	May 13, 2009		
NA	Roadlink	3433 Airport Way S	Seattle	October 29, 2008	Y	
NA	Samson Tug Maintenance Facility	7739-1st Avenue S	Seattle	May 20, 2009		Ecology (Wright)
NA	SeaProducts West Inc., dba: Flying Fish Express	7937 2nd Avenue S	Seattle	March 10, 2009	Y	Ecology (Jeffers)
NA	Seattle Barrel & Cooperage Co.	4716 Airport Way S	Seattle	October 23, 2008		
NA	Seattle Barrel & Cooperage Co.	4716 Airport Way S	Seattle	February 9, 2009		Ecology (Perle)
NA	Seattle Barrel & Cooperage Co.	4716 Airport Way S	Seattle	February 18, 2009		Ecology (Perle)
NA	Seattle City Light MRWF	3613 4th Avenue S	Seattle	March 3, 2009	Y	Ecology (Jeffers)
NA	Seattle Fire Department Station 27	1000 S Myrtle Street	Seattle	June 16, 2009		SPU (Wisdom)
NA	Seattle Granite Countertops, Inc.	4700 Ohio Avenue S	Seattle	February 19, 2009		SPU (Robinson)
NA	Seattle Heat Treaters	521 S Holden Street	Seattle	February 19, 2009		SPU (Robinson)
NA	Seattle Housing Authority	7500 Detroit Avenue SW	Seattle	May 20, 2009		Ecology (Jeffers)
NA	Seattle Radiator	5011 Ohio Avenue S	Seattle	November 4, 2008	Y	
NA	Seattle University	901-12th Avenue	Seattle	March 18, 2009	Y	Ecology (Jeffers)
NA	Seattle Vocational Institute	2120 S Jackson Street	Seattle	March 18, 2009		Ecology (Jeffers)
NA	Sherwin Williams Paint Co.	2940-6th Avenue S	Seattle	June 3, 2009		Ecology (Jeffers)
NA	Siemens Water Technologies Corp.	601 S Snoqualmie Street	Seattle	January 6, 2009		Ecology (Jeffers)
NA	Skyline Electric Manufacturing Co.	3619 7th Avenue S	Seattle	October 8, 2008		
NA	Sound Propeller Services	7916 8th Avenue S	Seattle	March 1, 2009		
NA	Sound Propeller Systems, Inc.	9130 15th Place S	Seattle	December 10, 2008	Y	Ecology (Jeffers)
NA	Sprague Co. Inc.	1136 Poplar Place S	Seattle	March 18, 2009	Y	Ecology (Jeffers)
NA	St. Vincent de Paul	5950-4th Avenue S	Seattle	April 15, 2009		Ecology (Jeffers)
NA	St. Vincent de Paul	5950-4th Avenue S	Seattle	June 16, 2009		
NA	Standard Steel Fabrication Co., Inc.	8155-1st Avenue S	Seattle	April 22, 2009		Ecology (Jeffers)
NA	Stewart Industries, Inc.	16 S Idaho Street	Seattle	October 22, 2008		
NA	The Essential Baking Co.	1001 S Myrtle Street	Seattle	June 16, 2009		SPU (Wisdom)
NA	The Snorkel Stove Co.	4216 6th Avenue S	Seattle	February 18, 2009		Ecology (Jeffers)
NA	Trade-Marx Sign & Display Co.	818 S. Dakota St.	Seattle	October 6, 2008	Y	
NA	U.S. Starcraft Corp.	5210 Utah Avenue S	Seattle	June 9, 2009		Ecology (Jeffers)
NA	United States Seafoods LLC	6901 West Marginal Way SW	Seattle	May 13, 2009	Y	Ecology (Jeffers)
NA	Urban Hardwoods, Inc.	4755C Colorado Avenue S	Seattle	February 19, 2009	Y	Ecology (Jeffers)
NA	Urban Hardwoods, Inc.	8427-1st Avenue S	Seattle	June 3, 2009		
NA	V. Van Dyke Inc.	150 S River Street	Seattle	March 19, 2009		SPU (Wisdom)

Appendix C: Ecology Source Contol Inspections (September 2008 through June 2009)[1]

NPDES Permit ID	Facility	Address	City	Date Inspected	In Compliance?	Lead Inspector
NA	Valley Rubber & Gasket Co. of WA	4201 Airport Way S	Seattle	January 20, 2009		Ecology (Jeffers)
NA	Valley Rubber & Gasket Co. of WA	4201 Airport Way S	Seattle	May 13, 2009		
NA	Valley Rubber & Gasket Co. of WA	4201 Airport Way S	Seattle	June 23, 2009		
NA	WA State Liquor Control Board	4401 East Marginal Way S	Seattle	October 22, 2008	Y	
NA	Washington Machine Works, Inc.	5211-1st Avenue S, Ste. C	Seattle	June 9, 2009	Y	Ecology (Jeffers)
NA	Westec Industries, Inc.	8101 7th Avenue S	Seattle	October 29, 2008	Y	
NA	Westeel	8001-7th Avenue S	Seattle	June 10, 2009		SPU (Robinson)
NA	Western Logistics, Inc.	3623 6th Avenue S	Seattle	November 4, 2008		
NA	Western Peterbilt Inc.	3707 Airport Way S	Seattle	January 20, 2009		Ecology (Jeffers)
NA	Western Peterbilt Inc.	3707 Airport Way S	Seattle	February 9, 2009	Y	
NA	Western Ports Transportation, Inc.	9369 8th Avenue S	Seattle	January 7, 2009		Ecology (Wright)
NA	Wooldridge Boats, Inc.	1303 S 96th Street	Seattle	December 4, 2008		Ecology (Jeffers)
NA	Wooldridge Boats, Inc.	1303 S 96th Street	Seattle	February 4, 2009	Y	
NA	Young Corporation	3231 Utah Avenue S	Seattle	June 16, 2009		Ecology (Jeffers)

1 - Information in this table was provided by Ecology's HWTR Urban Waters Inspector, and does not represent a complete list of all inspections conducted by Ecology staff.

Appendix D
Sediment Trap Sample Data
September 2008 through June 2009

D1. Chemicals Detected in Duwamish/Diagonal Sediment Traps (September 2008 through June 2009)

D2. Chemicals Detected in Slip 4 Sediment Traps (September 2008 through June 2009)

D3. Sediment Trap Results for Norfolk CSO/SD

Table D1. Chemicals Detected in Duwamish/Diagonal Sediment Traps (September 2008 through June 2009)

Station ID			ST1	ST2	ST3	ST5	ST6	ST7
Round			11	11	11	11	11	11
Date removed	SQS	CSL	09/25/08	09/23/08	09/23/08	09/23/08	09/23/08	09/23/08
Total solids (%)			37.2	52.7	77.7	44.7	61.7	66.4
Total organic carbon (%)			9.83	7.5	5.35	14.2	6.58	8.99
Metals (mg/kg)								
Arsenic	57	93	**20**	**10**	6 U	10 U	7 U	**9**
Copper	390	390	**218**	**136**	**110**	**112**	**63.9**	**111**
Lead	450	530	**142**	**107**	**182**	**111**	**66**	**92**
Mercury	0.41	0.59	**0.40**	**0.37**	0.05 U	**0.1**	**0.12**	**0.12**
Zinc	410	960	**845**	**459**	**268**	**530**	**335**	**554**
Total petroleum hydrocarbons (mg/kg)								
TPH-diesel	2000b		**1,300**	**960**	**290**	**1,000**	**460**	**1,100**
TPH-oil	2000b		**5,100**	**4,200**	**1,500**	**3,300**	**1,800**	**4,000**
LPAH (ug/kg DW)								
Acenaphthene	500	730	97 U	**64** J	210 U	260 U	**210**	72 U
Anthracene	960	4,400	**190**	**330**	210 U	260 U	**690**	72 U
Fluorene	540	1,000	97 U	**92** J	210 U	260 U	**260**	72 U
Naphthalene	2,100	2,400	**360**	**100**	**290**	260 U	160 U	72 U
Phenanthrene	1,500	5,400	**570**	**1,500**	**450**	**240** J	**4,400**	**190**
HPAH (ug/kg DW)								
Benzo(a)anthracene	1,300	1,600	**200**	**760**	**330**	**170** J	**2,900**	**160**
Benzo(a)pyrene	1,600	3,000	**470**	**1,400**	**300**	**210** J	**2,500**	**140**
Benzo(b)fluoranthene	3,200	3,600	**770**	**1,900**	**290**	**300**	**3,300**	**190**
Benzo(g,h,i)perylene	670	720	**240**	**460**	**110** J	260 U	**610**	**62** J
Benzo(k)fluoranthene	3,200	3,600	**620**	**1,600**	**390**	**340**	**3,200**	**190**
Chrysene	1,400	2,800	**1,000**	**2,600**	**460**	**400**	**3,500**	**260**
Dibenz(a,h)anthracene	230	540	97 U	**210**	210 U	260 U	**360**	72 U
Fluoranthene	1,700	2,500	**1,400**	**3,700**	**830**	**510**	**8,700**	**450**
Indeno(1,2,3-cd)pyrene	600	690	**150**	**440**	210 U	260 U	**720**	**47** J
Pyrene	2,600	3,300	**920**	**2,700**	**730**	**430**	**5,700**	**320**
Phthalates (ug/kg DW)								
Bis(2-ethylhexyl)phthalate	1,300	1,900	**13,000**	**12,000**	**5,100**	**8,400**	**2,700**	**2,200**
Butylbenzylphthalate	63	900	97 U	**220**	**270**	**710**	**320**	**44** J
Dimethylphthalate	71	160	97 U	63 J	210 U	260 U	**110** J	72 U
Di-n-butylphthalate	1,400	5,100	**150**	**890**	210 U	**300**	160 U	72 U
Di-n-octyl phthalate	6,200	NA	**1,900**	**2,700**	**3,200**	**280**	**270**	**280**
PCBs (ug/kg DW)								
Aroclor 1242			58 U	**80**	19 U	18 U	57 U	59 U
Aroclor 1248			**150**	20 U	19 U	30 Y	57 U	**87**
Aroclor 1254			**160**	**30**	**57**	41 Y	**140**	**240**
Aroclor 1260			**83**	20 U	19 U	18 U	86 Y	**130** J
Total PCBs	130	1,000	**393**	**110**	**57**	41 Y	**140**	**457**
Other organic compounds (ug/kg DW)								
4-Methylphenol	670	670	**440**	**920**	**390**	**2,400**	**1,100**	**69** J
Benzyl alcohol			97 U	**76** J	210 U	260 U	160 U	72 U
Carbazole			97 U	**520**	210 U	260 U	**1,000**	72 U
Dibenzofuran			97 U	**66** J	210 U	260 U	**150** J	72 U
Phenol	420	1,200	**100**	**70** J	210 U	260 U	160 U	72 U

Table D2. Chemicals Detected in Slip 4 Sediment Traps
(September 2008 through June 2009)

Sed Trap#	SQS/ LAET	CSL/ 2LAET	SL4-T1	SL4-T1	SL4-T2A	SL4-T2	SL4-T2	SL4-T3A	SL4-T3	SL4-T3	SL4-T4A	SL4-T4A	SL4-T4
Boeing MH #			**422**	**422**	**MH482**	**356**	**356**	**MH19C**	**364**	**364**	**229A**	**229A**	**221A**
Round			7B	8	7	7B	8	7	7B	8	7B	8	7B
Date removed			12/03/08	04/06/09	08/05/08	12/03/08	04/06/09	08/05/08	12/03/08	04/06/09	12/03/08	04/06/09	12/03/08
Sampled by			Boeing	Boeing	SPU	Boeing	Boeing	SPU	Boeing	Boeing	Boeing	Boeing	Boeing
TOC (%)			3.98	NA	NA	NA	NA	74.70	NA	NA	NA	NA	NA
Metals (mg/kg DW)													
Arsenic	57	93	9 U	NA	NA	NA	NA	30 U	NA	NA	NA	NA	NA
Copper	390	390	**168**	NA	NA	NA	NA	**86**	NA	NA	NA	NA	NA
Lead	450	530	**215**	NA	NA	NA	NA	**250**	NA	NA	NA	NA	NA
Mercury	0.41	0.59	**0.33**	NA	NA	NA	NA	0.09 U	NA	NA	NA	NA	NA
Zinc	410	960	**518**	NA	NA	NA	NA	**179**	NA	NA	NA	NA	NA
Total petroleum hydrocarbons (mg/kg DW)													
TPH-diesel	2000b		**71**	NA	NA	NA	NA	**420**	NA	NA	NA	NA	NA
TPH-oil	2000b		**450**	NA	NA	NA	NA	**5,300**	NA	NA	NA	NA	NA
LPAH (ug/kg DW)													
Acenaphthene	500	730	82 U	330 U	NA	88 U	NA	270 U	82 U	NA	NA	500 U	260 U
Anthracene	960	4,400	**85**	330 U	NA	88 U	NA	270 U	82 U	NA	NA	500 U	260 U
Fluorene	540	1,000	82 U	330 U	NA	88 U	NA	270 U	82 U	NA	NA	500 U	260 U
Phenanthrene	1,500	5,400	**770**	**1,100**	NA	**390**	NA	**1,300**	82 U	NA	NA	**2,300**	**2,800**
HPAH (ug/kg DW)													
Benzo(a)anthracene	1,300	1,600	**540**	**820**	NA	**330**	NA	**820**	82 U	NA	NA	**1,100**	**550**
Benzo(a)pyrene	1,600	3,000	**760**	**1,300**	NA	**520**	NA	**1,300**	82 U	NA	NA	**2,100**	**920**
Benzo(b)fluoranthene	3,200	3,600	**840**	**1,400**	NA	**820**	NA	**1,800**	82 U	NA	NA	**2,600**	**1,100**
Benzo(g,h,i)perylene	670	720	**600**	**1,200**	NA	**600**	NA	**880**	82 U	NA	NA	**2,300**	**810**
Benzo(k)fluoranthene	3,200	3,600	**920**	**1,500**	NA	**860**	NA	**2,000**	82 U	NA	NA	**3,500**	**1,600**
Chrysene	1,400	2,800	**970**	**1,500**	NA	**850**	NA	**2,200**	**84**	NA	NA	**3,300**	**1,800**
Dibenz(a,h)anthracene	230	540	**200**	**340**	NA	88 U	NA	270 U	82 U	NA	NA	**320** J	260 U
Fluoranthene	1,700	2,500	**1,900**	**2,500**	NA	**1,100**	NA	**2,700**	**100**	NA	NA	**4,800**	**3,800**
Indeno(1,2,3-cd)pyrene	600	690	**560**	**1,000**	NA	**530**	NA	**840**	82 U	NA	NA	**2,100**	**730**
Pyrene	2,600	3,300	**1,200**	**1,900**	NA	**810**	NA	**2,200**	**90**	NA	NA	**3,900**	**2,500**
Phthalates (ug/kg DW)													
Bis(2-ethylhexyl)phthalate	1,300	1,900	**2,300**	**7,300**	NA	**1,500**	NA	**3,800**	**340**	NA	NA	**2,500**	**5,500**
Butylbenzylphthalate	63	900	**100**	**240** J	NA	88 U	NA	270 U	82 U	NA	NA	500 U	260 U
Dimethylphthalate	71	160	82 U	330 U	NA	88 U	NA	270 U	82 U	NA	NA	500 U	260 U
Di-n-butylphthalate	1,400	5,100	82 U	330 U	NA	88 U	NA	270 U	82 U	NA	NA	**420** J	260 U
Di-n-octyl phthalate	6,200	NA	**440**	**1,900**	NA	**280**	NA	270 U	**2,000**	NA	NA	**16,000**	**3,600**
PCBs (ug/kg DW)													
Aroclor 1242			2,200 U	**680**	75 U	9.9 U	**48**	50 U	10 U	**28**	11 U	10 U	50 U
Aroclor 1254			**19,000**	250 U	**170**	**10**	34 U	**140**	**26**	21 U	11 U	10 U	**100**
Aroclor 1260			2,200 U	250 U	**190**	9.9 U	34 U	**97**	10 U	21 U	11 U	10 U	**140**
Total PCBs	130	1,000	**19,000**	**680**	**360**	**10**	**48**	**237**	**26**	**28**	11 U	10 U	**240**
Other organic compounds (ug/kg DW)													
2-Methylnaphthalene			82 U	330 U	NA	88 U	NA	270 U	82 U	NA	NA	500 U	260 U
4-Methylphenola	670	670	82 U	330 U	NA	88 U	NA	270 U	82 U	NA	NA	**380** J	260 U
Benzoic acida	650	650	**2,600**	3,300 U	NA	880 U	NA	2,700 U	820 U	NA	NA	5,000 U	2,600 U
Carbazole			**210**	NA	NA	**100**	NA	**350**	82 U	NA	NA	NA	**390**
Dibenzofuran			82 U	330 U	NA	88 U	NA	270 U	82 U	NA	NA	500 U	260 U
Phenola	420	1,200	82 U	330 U	NA	88 U	NA	270 U	82 U	NA	NA	500 U	260 U

Exceeds SQS/LAET

Exceeds CSL/2LAET

Table D2. Chemicals Detected in Slip 4 Sediment Traps
(September 2008 through June 2009)

SL4-T4	SL4-T5A	SL4-T5A	SL4-T5	SL4-T5	SL4-T6
221A	**178**	**178**	**363**	**363**	**NA**
8	7B	8	7B	8	7
04/06/09	12/03/08	04/06/09	12/03/08	04/06/09	08/05/08
Boeing	Boeing	Boeing	Boeing	Boeing	SPU
	13.2	14.9	13.1	14.6	NA
5.0 U	**20**	10 U	**20**	**20**	NA
61.4	**316** J	**759**	**556**	**764**	NA
83	**687** J	**257**	**273**	**275**	NA
0.11	**0.58** J	**0.42**	**1.0**	**0.7**	NA
317	**691**	**1,000**	**1,510**	**1,280**	NA
1,300	**230** J	**1,600**	**120** J	**3,900**	NA
3,400	**1,600** J	**5,800**	**710** J	**12,000**	NA
370 U	230 U	**150** J	230 U	470 U	100 U
370 U	**480**	**360**	230 U	**250** J	**230**
370 U	**230**	**190** J	230 U	470 U	100 U
1,800	**3,800**	**3,500**	**1,400**	**2,600**	**850**
700	**2,700**	**2,200**	**900**	**1,500**	**510**
1,500	**4,000**	**3,500**	**1,400**	**2,200**	**500**
2,200	**4,600**	**4,300**	**1,400**	**2,700**	**560**
1,600	**2,500**	**2,200**	**1,200**	**2,200**	**300**
2,200	**4,400**	**5,200**	**2,000**	**3,700**	**600**
2,600	**4,700**	**5,000**	**2,100**	**3,700**	**780**
410	**890**	**630**	**390**	**380** J	100 U
4,200	**9,500**	**8,100**	**3,700**	**5,800**	**1,400**
1,400	**2,400**	**2,400**	**1,100**	**2,000**	**230**
2,600	**5,500**	**5,800**	**2,300**	**4,200**	**1,300**
19,000	**9,800**	**24,000**	**5,900**	**34,000**	**7,400**
370 U	**370**	**240** J	**860**	**1,300**	**270**
370 U	230 U	250 U	230 U	470 U	**150**
370 U	230 U	250 U	230 U	470 U	100 U
22,000	**3,500**	**2,000**	**1,600**	**11,000**	**610**
160	49 U	**130**	510 U	**2,100**	55 U
82 U	**190**	68 U	**3,100**	1,100 U	**58**
82 U	**120**	68 U	510 U	1,100 U	**52** J
340	**310**	**130**	**3,100**	**2,100**	**110** J
370 U	230 U	**160** J	230 U	**270** J	100 U
520	**1,300**	**12,000**	**340**	**11,000**	**130**
3,400 J	2,300 U	2,500 U	2,300 U	**3,500** J	1,000 U
NA	**1,100**	NA	**410**	NA	**160**
370 U	230 U	**200** J	230 U	470 U	100 U
390	230 U	**640**	230 U	**1,900**	100 U

Table D3. Chemicals Detected in Norfolk CSO/SD Sediment Traps

NSTation ID			NST1	NST2	NST3	NST4	NST5	NST1	NST2	NST3	NST4	NST5
Round			1	1	1	1	1	2	2	2	2	2
Date removed	SQS/ LAET	CSL/ 2LAET	03/18/08	04/09/08	03/18/08	03/18/08	03/18/08	10/02/08	10/02/08	10/02/08	10/08/08	10/02/08
Total solids (%)			74.3	52.4	50.3	55.9	NA	NA	42.5	79.2	NA	NA
Total organic carbon (%)			3.03	5.83	8.18	4.48	NA	NA	13.3	4.49	NA	NA
Metals (mg/kg)												
Arsenic	57	93	7 U	**13**	10 U	20 U	8 U	NA	10 U	6 U	40 U	NA
Copper	390	390	**39**	**100**	**105**	**55**	**38**	NA	**113**	**39.2**	**103**	NA
Lead	450	530	**65**	**141**	**75**	**87**	**40**	NA	**92**	**32**	**130**	NA
Mercury	0.41	0.59	0.07 U	**0.16**	**0.70**	0.07 U	**0.09**	NA	**0.1**	0.05 U	0.3 U	NA
Zinc	410	960	**221**	**632**	**705**	**274**	**245**	NA	**823**	**289**	**484**	NA
Total petroleum hydrocarbons (mg/kg)												
TPH-diesel	2000[b]		NA	**1,400**	NA	NA	NA	NA	**840**	**200**	NA	NA
TPH-oil	2000[b]		NA	**4,400**	NA	NA	NA	NA	**5200**	**1200**	NA	NA
LPAH (ug/kg DW)												
Acenaphthene	500	500	260 U	**70** J	380 U	230 U	210 UW	NA	59 U	59 U	NA	NA
Anthracene	960	960	160 J	**120**	380 U	230 U	210 UW	NA	**52** J	**51** J	NA	NA
Fluorene	540	540	260 U	**140**	380 U	230 U	210 UW	NA	**32** J	59 U	NA	NA
Phenanthrene	1,500	1,500	730	**590**	**580**	**180** J	**120** JW	NA	**530**	**360**	NA	NA
HPAH (ug/kg DW)												
Benzo(a)anthracene	1,300	1,600	**480**	**380**	**350** J	230 U	210 UW	NA	**360**	**310**	NA	NA
Benzo(a)pyrene	1,600	1,600	**580**	**490** J	**540**	**180** J	**110** JW	NA	**500**	**440**	NA	NA
Benzo(b)fluoranthene	3,200	3,600	**790**	**660** J	**1,100**	**410**	230 W	NA	**780**	**660**	NA	NA
Benzo(g,h,i)perylene	670	720	**170** J	**310** J	**240** J	230 U	210 UW	NA	**450**	**350**	NA	NA
Benzo(k)fluoranthene	3,200	3,600	**660**	**660** J	**750**	**200** J	**150** JW	NA	**560**	**440**	NA	NA
Chrysene	1,400	2,800	**800**	**780**	**930**	**320**	**200** JW	NA	**730**	**530**	NA	NA
Dibenz(a,h)anthracene	230	540	260 U	**68** J	380 U	230 U	210 UW	NA	**71**	59 U	NA	NA
Fluoranthene	1,700	2,500	**1,700**	**1,200**	**1,700**	**550**	300 W	NA	**1100**	**840**	NA	NA
Indeno(1,2,3-cd)pyrene	600	690	**180** J	**260** J	**200** J	230 U	210 UW	NA	**360**	**300**	NA	NA
Pyrene	2,600	3,300	**1,200**	**2,100**	**1,100**	**330**	230 W	NA	**910**	**670**	NA	NA
Phthalates (ug/kg DW)												
Bis(2-ethylhexyl)phthalate	1,300	1,900	**10,000**	**7,000**	**16,000**	**390**	1,000 W	NA	**6100**	**1500**	NA	NA
Butylbenzylphthalate	63	900	**280**	**260**	380 U	230 U	210 UW	NA	**1500**	**110**	NA	NA
Dimethylphthalate	71	160	**610**	290 NJ	380 U	230 U	210 UW	NA	59 U	59 U	NA	NA
Di-n-butylphthalate	1,400	1,400	260 U	**78** J	380 U	230 U	210 UW	NA	**47** J	**48** J	NA	NA
Di-n-octyl phthalate	6,200	--	**670**	**220**	**1,100**	230 U	210 UW	NA	**620**	**52** J	NA	NA
PCBs (ug/kg DW)												
Aroclor 1248			910 U	**64**	990 U	900 U	960 UW	20 U	20 U	20 U	96 U	22 U
Aroclor 1254			910 U	**150**	990 U	900 U	960 UW	**31**	20 U	20 U	96 U	**100**
Aroclor 1260			910 U	**74**	990 U	900 U	960 UW	**20**	20 U	20 U	96 U	**36**
Total PCBs	130	1,000	910 U	**288**	990 U	900 U	960 UW	**51**	20 U	20 U	96 U	**136**
Other organic compounds (ug/kg DW)												
2-Methylnaphthalene			**310**	**73** J	380 U	230 U	210 UW	NA	59 U	59 U	NA	NA
2-Methylphenol[a]	63	63	260 U	89 U	380 U	230 U	210 UW	NA	**83**	59 U	NA	NA
4-Methylphenol[a]	670	670	260 U	**120**	**1,500**	230 U	210 UW	NA	**610**	59 U	NA	NA
Carbazole			260 U	**82** J	380 U	230 U	210 UW	NA	**130**	**81**	NA	NA
Dibenzofuran	540	540	260 U	**54** J	380 U	230 U	210 UW	NA	59 U	59 U	NA	NA
Phenol[a]	420	1,200	260 U	120 U	380 U	230 U	210 UW	NA	**70**	59 U	NA	NA

Appendix E
Ecology-SPU Interagency Grant Sampling Results

Table 1. Samples collected under Ecology interagency agreement C0800409

Table 2. Ecology interagency agreement sediment trap samples (dry weight)

Table 3. Ecology interagency agreement catch basin samples (dry weight)

Table 4. Ecology interagency agreement inline samples (dry weight)

Table 5. Ecology interagency agreement sieve/size fractionation samples (dry weight)

Table 1: Samples collected under Ecology interagency agreement C0800409.

Storm_Drain	Type	EQNUM[a]	Sta_ID	Sample_No	Sample_date	Xcoord	Ycoord	Location	Notes	Reconn_Date	Install_Date	Location
16th Ave S bridge (west)	RCB	NA	RCB210	RCB210-051909	05/19/09	1,274,557.68	196,248.28	12" CMP beneath 16th Ave S bridge on west side river	CB on South Park bridge			
16th Ave S SD	Inline	599773	MH201	MH201-111708-G	11/17/08	1,274,858.89	197,792.86	East side of 16th Ave S, u/s of Boeing	Not big enough for trap. Will collect only grabs			
16th Ave S SD	Inline	599821	MH202	MH202-111708-G	11/17/08	1,274,850.63	197,545.20	East side of 16th Ave S just north of river	Not big enough for trap. Will collect only grabs			
16th Ave S SD	Inline	714134	MH203	MH203-111708-G	11/17/08	1,274,778.94	197,450.40	West side of 16th Ave S just north of river	Not big enough for trap. Will collect only grabs			
16th Ave S SD	Inline	833132	MH212	MH212-032609	03/26/09	1,274,826.31	197,803.99	MH opposite side of street from MH201	Source tracing around MH201-202 (high Hg, benzyl alcohol, benzoic acid)			
16th Ave S SD	Inline	599710	MH213	MH213-042409	04/24/09	1,274,873.89	198,244.49	Dupe of MH214	Source tracing around MH201-202 (high Hg, benzyl alcohol, benzoic acid)			
16th Ave S SD	Inline	599710	MH214	MH214-042409	04/24/09	1,274,873.89	198,244.49	MH u/s of MH201/MH202	Source tracing around MH201-202 (high Hg, benzyl alcohol, benzoic acid)			
16th Ave S SD	RCB	4586258	RCB207	RCB207-042409	04/24/09	1,274,888.79	198,077.29	CB u/s of MH201/MH202	Source tracing around MH201-202 (high Hg, benzyl alcohol, benzoic acid)			
16th Ave S SD	RCB	4586258	RCB208	RCB208-042409	04/24/09	1,274,888.79	198,077.29	Dupe of RCB207	Source tracing around MH201-202 (high Hg, benzyl alcohol, benzoic acid)			
1st Ave S (west side)	CB	NA	CB150	CB150-052809	05/28/09	1,268,718.48	199,132.07	CB on Seattle Housing Authority at 7500 Detroit Ave SW	Sampled CB near NE corner of building			
1st Ave S SD (west side)	Inline	NA	1st-ST1	HP-ST1-090508-G	09/05/08	1,269,960.40	198,632.00	1st Ave S pond, N side of S Holden St--SR99 inlet	Inline grab at trap			
1st Ave S SD (west side)	Inline	NA	1st-ST1	1st-ST1-030609-G	03/06/09	1,269,960.40	198,632.00	1st Ave S pond, N side of S Holden St--SR99 inlet	Inline grab at trap			
1st Ave S SD (west side)	Inline	786737	1st-ST2	HP-ST2-090508-G	09/05/08	1,269,790.80	198,570.70	1st Ave S pond, N side of S Holden St--SR509 inlet	Inline grab at trap			
1st Ave S SD (west side)	Inline	786737	1st-ST2	1st-ST2-030609-G	03/06/09	1,269,790.80	198,570.70	1st Ave S pond, N side of S Holden St--SR509 inlet	Inline grab at trap			
1st Ave S SD (west side)	Inline	714106	1st-ST3	HP-ST3-091008-G	09/10/08	1,267,981.99	197,680.61	SW Kenyon St at 4th Ave SW	Inline grab at trap			
1st Ave S SD (west side)	Inline	714106	1st-ST3	1st-ST3-031209-G	03/12/09	1,267,981.99	197,680.61	SW Kenyon St at 4th Ave SW	Inline grab at trap			
1st Ave S SD (west side)	Inline	786748	1st-ST5	HP-ST5-091608-G	09/16/08	1,269,687.50	198,011.80	SR 509 (northbound), S Occidental St offramp	Inline grab at trap			
1st Ave S SD (west side)	Inline	714150	MH216	MH216-051909	05/19/09	1,270,357.31	197,352.44	2nd Ave S south of S Kenyon (by South Park transfer sta)	Source tracing around HP-ST5 (high Hg)			
1st Ave S SD (west side)	**Inline**	**714150**	**MH217**	**MH217-051909**	**05/19/09**	**1,270,357.31**	**197,352.44**	**Dupe of MH216**	**Source tracing around HP-ST5 (high Hg)**			
1st Ave S SD (west side)	Inline	599800	MH218	MH218-051909	05/19/09	1,269,824.34	197,691.78	S Kenyon St btw S Occidental St and 2nd Ave S	Source tracing around HP-ST5 (high Hg)			
1st Ave S SD (west side)	Inline	599800	MH219	MH219-051909	05/19/09	1,269,824.34	197,691.78	Dupe of MH218	Source tracing around HP-ST5 (high Hg)			
1st Ave S SD (west side)	Trap	NA	1st-ST1	1st-ST1-030609	03/06/09	1,269,960.40	198,632.00	1st Ave S pond, N side of S Holden St, SR99 inlet	Outfall from SR99	08/28/08	09/05/08	Outfall
1st Ave S SD (west side)	Trap	786737	1st-ST2	1st-ST2-030609	03/06/09	1,269,790.80	198,570.70	1st Ave S pond, N side of S Holden St, SR509 inlet	Outfall from SR509	08/28/08	09/05/08	Outfall
1st Ave S SD (west side)	Trap	714106	1st-ST3	1st-ST3-031209	03/12/09	1,267,981.99	197,680.61	SW Kenyon St at 4th Ave SW	On top of hill - drive up Highland Park Way to access	08/21/08	09/10/08	Wall
1st Ave S SD (west side)	Trap	600461	1st-ST7	HP-ST7-031709	03/17/09	1,269,028.98	193,714.03	Olson Pl SW just west of 1st Ave S	Olson subbasin (residential)	08/21/08	09/09/08	pipe
2nd Ave S SD	RCB	909756	RCB200b	RCB200-031709	03/17/09	1,270,388.58	198,972.63	CB NW corner SW Webster St and 2nd Ave S	Source tracing around RCB139 (high Hg and PCBs)			
2nd Ave S SD	RCB	779585	RCB201	RCB201-042409	04/24/09	1,270,377.82	198,814.37	Sand box d/s of RCB139	Source tracing around RCB139 (high Hg and PCBs)			
2nd Ave S SD	RCB	779582	RCB202	RCB202-031709	03/17/09	1,270,563.44	198,962.04	Sand box u/s of RCB109	Source tracing around RCB139 (high Hg and PCBs)			
2nd Ave S SD	RCB	779588	RCB203	RCB203-031709	03/17/09	1,270,622.25	198,708.73	Sand box u/s of RCB139	Source tracing around RCB139 (high Hg and PCBs)			
2nd Ave S SD	RCB	909756	RCB209	RCB209-031709	03/17/09	1,270,388.58	198,972.63	Dupe of RCB201	Source tracing around RCB139 (high Hg and PCBs)			
2nd Ave S SD	RCB	779603	RCB175	RCB175-060409	06/04/09	1,270,378.29	198,411.28	CB at SW corner of intersection 2nd Ave S and S Holden St	Checking transport of As from Marine Lumber			SD
7th Ave S SD	Inline	599721	7th-ST1	7th-ST1-091008-G	09/10/08	1,271,845.54	198,135.36	S Portland St and 7th Ave S	Inline grab at trap			
7th Ave S SD	Inline	599721	7th-ST1	7th-ST1-031709-G	03/17/09	1,271,845.54	198,135.36	S Portland St and 7th Ave S	Inline grab at trap			
7th Ave S SD	Inline	878755	7th-ST2	7th-ST2-091608-G	09/16/08	1,270,702.00	193,616.50	4th Ave S at S Barton St, next to P-patch	Inline grab at trap			
7th Ave S SD	Inline	599941	7th-ST3	SP-ST1-082808-G	08/28/08	1,271,346.96	196,842.03	S Southern St just W of 7th Ave S	Inline grab at trap			
7th Ave S SD	Inline	599941	7th-ST3	7th-ST3-031209-G	03/12/09	1,271,346.96	196,842.03	S Southern St just W of 7th Ave S	Inline grab at trap			
7th Ave S SD	Inline	714148	MH228	MH228-052609	05/26/09	1,271,822.25	197,354.43	7th Ave S at S Monroe St	Tracing PCBs			
7th Ave S SD	Inline	600154	MH230	MH230-052709	05/27/09	1,271,116.50	195,602.90	7th Ave S at S Chicago St	Source tracing around 7th-ST1G (high PCBs)			
7th Ave S SD	RCB	4586913	RCB170	RCB170-052809	05/28/09	1,271,770.52	197,355.40	CB SW corner S Monroe St and 7th Ave S	Downgradient of Marine Lumber (high As)			
7th Ave S SD	**RCB**	**NA**	**RCB213**	**RCB213-052709**	**05/27/09**	**1,271,822.25**	**197,354.43**	**7th Ave S at S Monroe St**	**Composite from 4 CBs at intersection**			
7th Ave S SD	RCB	NA	RCB214	RCB214-052709	05/27/09	1,271,822.25	197,354.43	7th Ave S at S Monroe St	Pair with RCB213 (bulk sample)			
7th Ave S SD	RCB	779658	RCB223	RCB223-060309	06/03/09	1,273,026.17	193,482.18	S Park boat storage, NE corner S Barton St and 10th Ave S	Bob W request			
7th Ave S SD	Sieve	714148	MH229	MH229-052609	05/26/09	1,271,822.25	197,354.43	7th Ave S at S Monroe St	Pair with MH228 (bulk sample)			
7th Ave S SD	Sieve	NA	RCB214	RCB214-052709	05/27/09	1,271,822.25	197,354.43	7th Ave S at S Monroe St	Pair with RCB213 (bulk sample)			
7th Ave S SD	Trap	599721	7th-ST1	7th-ST1-031709	03/17/09	1,271,845.54	198,135.36	7th Ave S at S Portland St	Lower basin	08/14/08	09/10/08	Wall
7th Ave S SD	Trap	878755	7th-ST2	7th-ST2-031709	03/17/09	1,270,702.00	193,616.50	4th Ave S at S Barton St, next to P-Patch	Upper basin	08/21/08	09/16/08	Wall
7th Ave S SD	Trap	599941	7th-ST3	7th-ST3-031209	03/12/09	1,271,346.96	196,842.03	S Southern St just W of 7th Ave S	Middle basin (at Modern Machine Co.)	08/14/08	08/28/08	Pipe
8th Ave S (no SD)	CB	NA	CB144	CB144-052709	05/27/09	1,272,661.57	200,016.50	Cleanscapes-Stemoff property (trace PCBs on 8th Ave S)	CB at driveway entrance (plumbed to SS on 8th Ave S)			
8th Ave S (no SD)	Dirt	NA	CB145	CB145-052709	05/27/09	1,272,655.67	200,013.72	Cleanscapes-Stemoff property (trace PCBs on 8th Ave S)	Street dirt at driveway entrance on 8th Ave S (trace PCBs in road)			
8th Ave S (no SD)	Dirt	NA	CB146	CB146-052709	05/27/09	1,273,086.57	199,853.50	Cleanscapes-Stemoff property (trace PCBs on 8th Ave S)	Dirt pile at southeast corner of property			
8th Ave S (no SD)	Dirt	NA	CB147	CB147-052709	05/27/09	1,272,899.07	199,935.95	Cleanscapes-Stemoff property (trace PCBs on 8th Ave S)	Surface dirt from yard area on east side of building			
8th Ave S (no SD)	Dirt	NA	CB148	CB148-052709	05/27/09	1,272,954.28	199,833.86	Cleanscapes-Stemoff property (trace PCBs on 8th Ave S)	Dirt pile on south-central side of property			
8th Ave S (no SD)	Dirt	NA	CB149	CB149-052709	05/27/09	1,272,550.12	199,860.95	Cleanscapes-Stemoff property (trace PCBs on 8th Ave S)	Street dirt at driveway entrance at 701 S Orchard (on 8th Ave S)			
Diagonal Ave S CSO/SD	CB	4126616	RCB224	RCB224-060309	06/03/09	1,269,753.70	207,846.70	Waste Management S Alaska St facility	Bob W request			
Diagonal Ave S CSO/SD	Dirt	NA	RCB206	RCB206-041509	04/15/09	1,272,634.90	208,244.91	Airport Wy S. Street dirt from E gutter line d/s of Seattle Barrel. Surrogate for 572834	Source tracing Seattle Barrel			
Diagonal Ave S CSO/SD	Dirt	NA	RCB218	RCB218-060209	06/02/09	1,272,501.56	208,590.74	S Snoqualmie St at Seattle Barrel driveway/alley	Source tracing Hg			
Diagonal Ave S CSO/SD	Inline	597425	MH17	MH17-112508-G	11/25/08	1,269,947.18	209,794.62	1st Ave S, just north of Diagonal Ave S	Resample of Diagonal post-cleaning			
Diagonal Ave S CSO/SD	Inline	597663	MH18	MH18-112508-G	11/25/08	1,271,741.79	208,576.18	S Snoqualmie St at 6th Ave S	Resample of Diagonal post-cleaning. High Hg			
Diagonal Ave S CSO/SD	Inline	597578	MH207	MH207-020409	02/04/09	1,271,746.29	208,971.70	MH u/s of MH 18 on 6th Ave S	Source tracing around MH18 (high Hg. Suspect Seattle Barrel)			
Diagonal Ave S CSO/SD	**Inline**	**597667**	**MH208**	**MH208-020409**	**02/04/09**	**1,272,356.61**	**208,570.08**	**MH u/s of MH 18 on S Snoqualmie St**	**Source tracing around MH18 (high Hg. Suspect Seattle Barrel)**			
Diagonal Ave S CSO/SD	Inline	597588	MH209	MH209-020409	02/04/09	1,272,400.92	208,905.76	Replacement for 597592	Source tracing for Seattle Barrel			
Diagonal Ave S CSO/SD	Inline	597517	MH210	MH210-020409	02/04/09	1,269,302.65	209,254.03	Mainline at Colorado Ave S. Alternate for MH19	Recheck post cleaning			
Diagonal Ave S CSO/SD	Inline	NA	MH21a	MH21a-031209	03/12/09	1,270,043.55	209,732.71	New MH by Charlies Produce	Resample of Diagonal post-cleaning. High Hg			
Diagonal Ave S CSO/SD	Inline	597721	MH231	MH231-052709	05/27/09	1,271,739.97	208,296.78	MH at S Alaska St and 6th Ave S	Source tracing S Snoqualmie Hg hit (on 6th Ave S)			
Diagonal Ave S CSO/SD	Inline	596898	MH232	MH232-052709	05/27/09	1,272,699.27	212,327.27	MH on Diagonal Ave S S of 8th Ave S	General source tracing in Diagonal			
Diagonal Ave S CSO/SD	Inline	597318	MH233	MH233-052709	05/27/09	1,271,764.93	210,432.55	MH on 6th Ave S at S Dakota St	General source tracing in Diagonal			
Diagonal Ave S CSO/SD	Inline	597296	MH234	MH234-052709	05/27/09	1,271,021.19	210,544.20	MH on Diagonal ave S W of 4th Ave S	General source tracing in Diagonal			
Diagonal Ave S CSO/SD	Inline	597599	MHT6Bx	T6B-011509-G	01/15/09	1,269,477.24	208,841.96	Denver Ave S, btw Diagonal Ave S and 1st Ave S (d/s of T6B)	This is not same as T6B collected 2/28/02 for Diagonal cleaning project			
Diagonal Ave S CSO/SD	Inline	597312	T2A	T2A-112508-G	11/25/08	1,270,952.40	210,468.91	Diagonal Ave S, 1 MH u/s of M4	Resample of Diagonal post-cleaning. High PCBs			
Diagonal Ave S CSO/SD	RCB	572810	RCB1	CB1-112508-G	11/25/08	1,272,312.88	208,338.09	7th Ave S and S Alaska St	Resample of RCB1			
Diagonal Ave S CSO/SD	RCB	572854	RCB204	RCB204-032609	03/26/09	1,272,585.81	208,222.19	CB on west side Airport Wy S, opposite Seattle Barrel	Source tracing around RCB36 (high Hg and metals)			
Diagonal Ave S CSO/SD	RCB	573076	RCB205	RCB205-032609	03/26/09	1,272,585.26	207,742.46	CB on east side Airport Wy S, d/s Seattle Barrel	Source tracing around RCB36 (high Hg and metals)			
Diagonal Ave S CSO/SD	RCB	2732575	RCB215	RCB215-052809	05/28/09	1,271,719.83	208,227.71	6th Ave S south of S Alaska St	General source tracing in Diag system			
Diagonal Ave S CSO/SD	RCB	2732575	RCB216	RCB216-052809	05/28/09	1,271,719.83	208,227.71	6th Ave S south of S Alaska St	Pair with RCB215 (bulk sample)			
Diagonal Ave S CSO/SD	RCB	572664	RCB217	RCB217-060209	06/02/09	1,272,380.26	208,636.57	E side of 7th Ave S at Seattle Barrel	Source tracing Hg			
Diagonal Ave S CSO/SD	RCB	572855	RCB36	CB36-112508-G	11/25/08	1,272,625.53	208,221.16	Airport Way S and S Alaska St	Resample of RCB36			
Diagonal Ave S CSO/SD	RCB	570232	RCB37	RCB37-020409	02/04/09	1,273,172.84	213,963.16	MH at SE corner Airport Wy S and S Stevens St	Analyze for PCBs (check whether pipe jetting in 1/08 corrected problem)			

Table 1: Samples collected under Ecology interagency agreement C0800409.

Storm_Drain	Type	EQNUM[a]	Sta_ID	Sample_No	Sample_date	Xcoord	Ycoord	Location	Notes	Reconn_Date	Install_Date	Location
Diagonal Ave S CSO/SD	Sieve	597721	MH236	MH236-052809	05/28/09	1,271,739.97	208,296.78	MH at S Alaska St and 6th Ave S	Pair with MH231 (bulk sample)			
Diagonal Ave S CSO/SD	Sieve	2732575	RCB216	RCB216-052809	05/28/09	1,271,719.83	208,227.71	6th Ave S south of S Alaska St	Pair with RCB215 (bulk sample)			
Diagonal Ave S SD	CB	4268005	CB203	CB203-052109	05/21/09	1,267,671.30	208,266.30	CB on Port property (ConGlobal)	Access with permission from ConGlobal 206-767-6000			
Diagonal Ave S SD	Dirt	4267992	CB204	CB204-052109	05/21/09	1,267,404.90	208,507.00	Surface dirt composite on Port property (ConGlobal)	Access with permission from ConGlobal 206-767-6000			
Direct discharge	CB	NA	CB206	CB206-060309	06/03/09	1,272,667.29	197,852.95	Independent Metals CB	Bob W request			
Hamm Creek	Inline	NA	HC-ST1	HC-ST1-112108-G	11/21/08	1,275,382.75	190,530.64	Just u/s of W Marginal Wy SW	Inline grab at trap			
Hamm Creek	Inline	NA	HC-ST1	HC-ST1-041509-G	04/15/09	1,275,382.75	190,530.64	Just u/s of W Marginal Wy SW	Inline grab at trap			
Hamm Creek	Trap	NA	HC-ST1	HC-ST1-041509	04/15/09	1,275,382.75	190,530.64	Near Des Moines Memorial Dr S and 17th Pl S	Traps attached to u/s end of culvert on west side of Des Moines Memorial Dr S	11/21/08	10/31/08	Pipe
Highland Park Way S SD	Trap	599241	HP-ST4	HP-ST4-031209	03/12/09	1,267,618.04	200,796.20	Northwest corner of W Marginal and Highland Pk Wy	In grass on corner, pull into 'driveway' from southbound W. Marginal	08/14/08	09/10/08	Pipe
Highland Park Way S SD	Trap	599219	HP-ST6	HP-ST6-041509	04/15/09	1,268,086.32	200,870.80	SW Michigan St just east of W Marginal Wy S	Check-in at SeaFreeze office on T115	08/14/08	09/25/08	Wall
Highland Park Way S SD	Inline	599241	HP-ST4	HP-ST4-091008-G	09/10/09	1,267,618.04	200,796.20	Northwest corner of W Marginal Wy SW and Highland Pk Wy SW	Inline grab at trap			
Highland Park Way S SD	Inline	599219	HP-ST6	HP-ST6-092508-G	09/25/08	1,268,086.32	200,870.80	SW Michigan St just east of W Marginal Wy S	Inline grab at trap			
Highland Park Way S SD	Inline	599219	HP-ST6	HP-ST6-041509-G	04/15/09	1,268,086.32	200,870.80	SW Michigan St just east of W Marginal Wy S	Inline grab at trap			
KCIA SD#1	Inline	NA	KCIA1-ST1	KC2-ST1-032609-G	03/26/09	1,278,114.80	193,883.20	KC Airport SD #1 at Slip 6, MH east of E Marginal Wy S	Inline grab at trap			
KCIA SD#1	Trap	NA	KCIA1-ST1	KC2-ST1-032609	03/26/09	1,278,114.80	193,883.20	KC Airport SD #1 at Slip 6, MH east of E Marginal Wy S	In front of AOC bldg. Call Peter Dumaliang for access 206-296-7380	09/25/08	09/25/08	Pipe
KCIA SD#2	Inline	NA	CB208	CB208-060309	06/03/09	1,277,955.84	194,916.80	Pump station vault	Bob W request			
KCIA SD#2	Inline	NA	KCIA2-ST1	KCAir-ST1-092508-G	09/25/08	1,277,685.38	194,822.09	KC Airport SD#2 at former Slip 5, MH east of E Marginal Wy S	Inline grab at trap			
KCIA SD#2	Inline	NA	KCIA2-ST1	KC1-ST1-032609-G	03/26/09	1,277,685.38	194,822.09	KC Airport SD#2 at former Slip 5, MH east of E Marginal Wy S	Inline grab at trap			
KCIA SD#2	Trap	NA	KCIA2-ST1	KC1-ST1-032609	03/26/09	1,277,685.38	194,822.09	KC Airport SD#2 at former Slip 5, MH east of E Marginal Wy S	Call Peter Dumaliang for access 206-296-7380	09/25/08	09/25/08	Pipe
KCIA-Jorgensen SD	Inline	NA	KCIAJ-ST1	KCJ-ST1-032609-G	03/26/09	1,277,261.40	195,824.50	KC Airport SD at Boeing/Jorgensen, MH east of E Marginal Wy S	Inline grab at trap			
KCIA-Jorgensen SD	Trap	NA	KCIAJ-ST1	KCJ-ST1-032609	03/26/09	1,277,261.40	195,824.50	KC Airport SD at Boeing/Jorgensen, MH east of E Marginal Wy S	Call Peter Dumaliang for access 206-296-7380	09/25/08	09/25/08	Pipe
Private storm drain	CB	NA	CB142	CB142-052109	05/21/09	1,267,158.67	205,348.91	5430 W Marginal Wy SW, collected from Chemithon CB#18	To Glacier Bay. Recheck PCBs at Chemithon			
Private storm drain	CB	NA	CB143	CB143-052609	05/26/09	1,273,650.46	199,184.31	Composite of 2 CBs at Emerald Services 7343 E Marginal Wy S	To Slip 4. Recheck PCBs at Emerald Services (new SD system)			
S 96th St SD	Inline	NA	96-ST1	96-ST1-121108-G	12/11/08	1,270,741.32	192,246.67	Driveway north of S 96th St, west of W Marginal Pl S	Inline grab at trap			
S 96th St SD	Inline	NA	96-ST1	96-ST1-042409-G	04/24/09	1,270,741.32	192,246.67	Driveway north of S 96th St, west of W Marginal Pl S	Inline grab at trap			
S 96th St SD	Inline	NA	96-ST2	96-ST2-121108-G	12/11/08	1,275,063.56	192,278.28	S 96th St east of W Marginal Pl S	Inline grab at trap			
S 96th St SD	Inline	NA	96-ST2	96-ST2-042409-G	04/24/09	1,275,063.56	192,278.28	S 96th St east of W Marginal Pl S	Inline grab at trap			
S 96th St SD	Inline	NA	96-ST3	96-ST3-120308-G	12/03/08	1,275,030.99	192,684.64	Vault at 4th Ave S and S 96th St	Inline grab at trap			
S 96th St SD	Inline	NA	96-ST3	96-ST3-051309-G	05/13/09	1,275,030.99	192,684.64	Vault at 4th Ave S and S 96th St	Inline grab at trap			
S 96th St SD	RCB	NA	RCB222	RCB222-060309	06/03/09	1,273,039.95	192,752.90	E side 10th Ave S at ditch entrance	Bob W request			
S 96th St SD	Trap	NA	96-ST1	96-ST1-042409	04/24/09	1,270,741.32	192,246.67	Driveway north of S 96th St, west of W Marginal Pl S	On Delta Marine property	12/03/08	12/11/08	Wall
S 96th St SD	Trap	NA	96-ST2	96-ST2-042409	04/24/09	1,275,063.56	192,278.28	S 96th St east of W Marginal Pl S	On Delta Marine property	12/03/08	12/11/08	Wall
S 96th St SD	Trap	NA	96-ST3	96-ST3-051309	05/13/09	1,275,030.99	192,684.64	Vault at 4th Ave S and S 96th St	Behind locked City Light gate	10/31/08	12/03/08	Wall
S Brighton CSO	Inline	701117	MH204	MH204-011509-G	01/15/09	1,271,933.58	201,802.91	Last MH before overflow. Sediment from channel ledge, not in pipe	Source tracing first sample. Followup as needed			
S Brighton CSO/SD	Inline	599157	MH205	MH205-011509-G	01/15/09	1,271,076.59	201,126.61	Past end of S Brighton St west of Fox Ave S	Moved from 599155 due to collapsed pier.			
S Brighton CSO/SD	Inline	599155	MH222	MH222-052109	05/21/09	1,270,365.94	201,142.99	Last MH before outfall on SeaTac Marine site	Source tracing around problem line on S Brighton St (collapsed, full of oily sediment)			
S Brighton CSO/SD	Inline	599156	MH223	MH223-052109	05/21/09	1,270,726.75	201,133.36	Immediately u/s of MH222	Source tracing As at MH205			
S Brighton CSO/SD	Inline	599158	MH224	MH224-052109	05/21/09	1,271,124.35	201,125.32	MH intersection Fox Ave S and S Brighton St	Source tracing As at MH205			
S Brighton CSO/SD	Inline	599217	MH225	MH225-052109	05/21/09	1,271,354.93	200,875.87	MH intersection Fox Ave S and S Willow St	Source tracing As at MH205			
S Brighton CSO/SD	Inline	599164	MH226	MH226-052609	05/26/09	1,271,510.10	201,104.92	Mid-S. Brighton b/w Rosella Foods and diesel ASTs	located north of fence adjacent to diesel storage tanks in grassy area along Brighton St.			
S Brighton CSO/SD	RCB	575853	RCB211	RCB211-052609	05/26/09	1,271,216.50	201,039.12	Fox Ave S just south of S Brighton St	Source tracing As at MH205			
S Brighton CSO/SD	RCB	575853	RCB212	RCB212-052609	05/26/09	1,271,216.50	201,039.12	Fox Ave S just south of S Brighton St	Pair with RCB211 (bulk sample)			
S Brighton CSO/SD	Sieve	599156	MH227	MH227-052609	05/26/09	1,270,726.75	201,133.36	Immediately u/s of MH222	Pair with MH223 (bulk sample)			
S Brighton CSO/SD	Sieve	575853	RCB212	RCB212-052609	05/26/09	1,271,216.50	201,039.12	Fox Ave S just south of S Brighton St	Pair with RCB211 (bulk sample)			
S Garden St SD	CB	NA	CB207	CB207-060309	06/03/09	1,271,665.51	199,903.78	CB on driveway at Seattle Iron and Metals prop.	Bob W request			
S Garden St SD	Inline	NA	MH240	MH240-060309	06/03/09	1,271,704.38	199,900.94	MH at inlet to vault on Seattle Iron and Metals prop	Bob W request			
S Nevada SD	Inline	597366	MH206	MH206-011509-G	01/15/09	1,268,251.02	210,032.94	S Nevada St 2 MHs west of E Marginal Wy S	Attempted collection from 597359 but no sediment present			
S River St SD	Inline	599043	MH211	MH211-031209	03/12/09	1,269,926.63	201,715.30	Last MH on line	Source tracing first sample. Followup as needed			
S River St SD	CB	819431	CB202	CB202-052009	05/20/09	1,270,710.77	201,947.06	CB SW corner 150 S River St	Source tracing TPH at MH 211			
S River St SD	Inline	599010	MH220	MH220-052009	05/20/09	1,270,344.14	201,900.02	MH north side S River St at 2nd Ave S	Source tracing TPH at MH 211			
S River St SD	Inline	598993	MH221	MH221-052009	05/20/09	1,270,710.77	201,947.06	MH on S River St betw E Marginal Wy S, 2nd Ave S	Source tracing TPH at MH 211			
S River St SD	RCB	819431	CB205	CB205-052709	05/27/09	1,270,710.77	201,947.06	CB SW corner 150 S River St	Pair with CB202 (bulk sample)			
S River St SD	Sieve	819431	CB205	CB205-052709	05/27/09	1,270,710.77	201,947.06	CB SW corner 150 S River St	Pair with CB202 (bulk sample)			
S River St SD	Sieve	599010	MH235	MH235-052709	05/27/09	1,270,344.14	201,900.02	MH north side S River St at 2nd Ave S	Pair with MH220 (bulk sample)			
S96th St SD	Inline	NA	MH239	MH239-060309	06/03/09	1,272,236.04	192,196.83	NW corner S 96th St and 8th Ave S	Bob W request			
S96th St SD	RCB	NA	RCB221	RCB221-060309	06/03/09	1,272,274.50	191,562.82	Culvert outlet 8th Ave S, S of S 96th St (to open channel to pipe)	Bob W request			
SW Dakota SD/ditch	RCB	597264	RCB200a	RCB200-082808-G	08/28/08	1,265,107.54	210,662.85	SW Dakota St just east of W Marginal Wy SW	too close to train tracks for safe CSE			
SW Idaho SD	Inline	NA	DK-ST1	DK-ST1-091008-G	09/16/08	1,263,879.13	206,423.86	North end of 19th Ave SW at SW Dawson St	Inline grab at trap			
SW Idaho SD	Inline	NA	DK-ST1	DK-ST1-030609-G	03/06/09	1,263,879.13	206,423.86	North end of 19th Ave SW at SW Dawson St	Inline grab at trap			
SW Idaho SD	Inline	597411	ID-ST2	WM-ST1-090508-G	09/05/08	1,265,316.19	209,904.80	SW Idaho St just east of W Marginal Wy SW	Inline grab at trap			
SW Idaho SD	Inline	598150	MH237	MH237-060209	06/02/09	1,264,739.45	206,089.78	MH 16th Ave SW S of SW Dawson St	Tracing TPH, PAH at ID-ST1			
SW Idaho SD	RCB	573737	RCB219	RCB219-060209	06/02/09	1,264,769.39	206,094.48	CB east side 16th Ave SW S of SW Dawson St	Tracing TPH, PAH at ID-ST1			
SW Idaho SD	RCB	573737	RCB220	RCB220-060209	06/02/09	1,264,769.39	206,094.48	CB east side 16th Ave SW S of SW Dawson St	Pair with RCB219 (bulk sample)			
SW Idaho SD	Sieve	598150	MH238	MH238-060209	06/02/09	1,264,739.45	206,089.78	MH 16th Ave SW S of SW Dawson St	Pair with MH237 (bulk sample)			
SW Idaho SD	Sieve	573737	RCB220	RCB220-060209	06/02/09	1,264,769.39	206,094.48	CB east side 16th Ave SW S of SW Dawson St	Pair with RCB219 (bulk sample)			
SW Idaho SD	Trap	NA	DK-ST1	DK-ST1-030609	03/06/09	1,263,879.13	206,423.86	North end of 19th Ave SW at SW Dawson St	Traps attached to u/s end of culvert on south side of Dawson	08/28/08	09/16/08	Pipe
SW Idaho SD	Trap	598047	ID-ST1	ID-ST1-030609	03/06/09	1,264,220.16	206,583.53	18th Ave SW and S Hudson St	In grass on 18th Ave SW just N of SW Dawson St, at entrance to City Light yard	08/28/08	08/28/08	Pipe
SW Idaho SD	Trap	597411	ID-ST2	ID-ST2-030609	03/06/09	1,265,316.19	209,904.80	SW Idaho St just east of W Marginal Wy S	Near d/s end of system	08/21/08	09/05/08	Pipe
SW Kenny SD	Inline	598644	KN-ST1	KEN-ST1-091008-G	09/10/08	1,268,138.36	203,628.91	Eastern end of S Kenny St, in T115	Inline grab at trap			
SW Kenny SD	Inline	598644	KN-ST1	KN-ST1-031709-G	03/17/09	1,268,138.36	203,628.91	Eastern end of S Kenny St, in T115	Inline grab at trap			
SW Kenny SD	Trap	598644	KN-ST1	KN-ST1-031709	03/17/09	1,268,138.36	203,628.91	East end of S Kenny St, on T115	Contact Al Zurawski, Northland Services for access 206-409-8673	08/21/08	09/10/08	Pipe
WSDOT SD- S Ryan St	Inline	NA	MH215	MH215-051309	05/13/09	1,279,908.27	189,509.80	E Marginal Wy S btw Boeing Access Rd and S 103rd St	Site in planter strip, east side of E. Marginal, across from intersection of E. Marginal and 104th St S.			

Table 2: Ecology interagency agreement sediment trap samples (dry weight).

Station ID			1st-ST1	1st-ST2	1st-ST3	DK-ST1	ID-ST1	ID-ST2	7th-ST1	7th-ST2	7th-ST3	HP-ST4	HP-ST6	HP-ST7	KN-ST1	96-ST1	96-ST2
Lab Ref			OP80	OP80	OQ56	OP80	OP80	OP80	OR05	OR05	OQ56	OQ56	OV62	OR05	OR05	OW77	OW77
Type			Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap
Outfall			1st Ave S SD	1st Ave S SD	1st Ave S SD	SW Idaho SD	SW Idaho SD	SW Idaho SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	Highland Park Wy SD	Highland Park Wy SD	1st Ave S SD	SW Kenny SD	S 96th St SD	S 96th St SD
Date	SQS/ LAET	CSL/ 2LAET	03/06/09	03/06/09	03/12/09	03/06/09	03/06/09	03/06/09	03/17/09	03/17/09	03/12/09	03/12/09	04/15/09	03/17/09	03/17/09	04/24/09	04/24/09
Total solids (%)			46.7	NA	67	59	36.4	64.8	NA	35.6	NA	68.9	35.6	67.6	49.2	48.9	66.7
Total organic carbon (%)			9.04	NA	7.32	2.55	7.14	1.84	NA	4.61	NA	8.93	7.53	4.5	3.65	16.9	8.85
Metals (mg/kg)																	
Arsenic	57	93	9 U	20 U	8 U	9 U	10 U	7 U	**20**	**30**	**20**	8 U	**30**	7 U	**10**	**20**	7 U
Copper	390	390	**177**	**121**	**34.7**	**29.5**	**101**	**24.8**	**193**	**27.7**	**126**	**42.4**	**145**	**39**	**96.8**	**60**	**45.6**
Lead	450	530	**81**	**128**	**14**	**49**	**113**	**16**	**149**	**27**	**104**	**70**	**148**	**218**	**69**	**82**	**56**
Mercury	0.41	0.59	**0.14**	**0.20**	0.07 U	**0.09**	**0.20**	0.06 U	**0.18**	0.10 U	**0.20**	0.07 U	**0.34**	0.05 U	**0.11**	**0.07**	**0.05**
Zinc	410	960	**647**	**579**	**203**	**228**	**836**	**100**	**918**	**229**	**619**	**228**	**779**	**192**	**463**	**406**	**458**
Total petroleum hydrocarbons (mg/kg)																	
TPH-diesel	2,000[b]		**2,400**	NA	**290**	95 U	**1,200**	**86**	NA	140 U	NA	**280**	**1,200**	**480**	**870**	**390**	**160**
TPH-oil	2,000[b]		**11,000**	NA	**1,300**	**480**	**7,700**	**600**	NA	**600**	NA	**1,600**	**4,800**	**2,600**	**4,700**	**1,400**	**1,000**
LPAH (ug/kg DW)																	
Acenaphthene	500	500	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	**210**	58 U
Acenaphthylene	1,300	1,300	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
Anthracene	960	960	200 U	NA	88 U	59 U	**590**	59 U	NA	20 U	170 U	93 U	160 U	110 U	**250**	**580**	58 U
Fluorene	540	540	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	**250**	58 U
Naphthalene	2,100	2,100	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	**75**	58 U
Phenanthrene	1,500	1,500	**590**	NA	**170**	59 U	**3,600**	**160**	NA	20 U	**110** J	**58** J	**370**	**490**	**1,200**	**2,400**	**210**
HPAH (ug/kg DW)																	
Benzo(a)anthracene	1,300	1,600	**340**	NA	**140**	59 U	**5,600**	**220**	NA	20 U	170 U	93 U	**160**	**290**	**700**	**1,100**	**160**
Benzo(a)pyrene	1,600	1,600	**310**	NA	**160**	59 U	**8,300**	**320**	NA	20 U	**110** J	93 U	160 U	**390**	**740**	**1,200**	**170**
Benzo(b)fluoranthene	3,200	3,600	**390**	NA	**160**	**34** J	**25,000**	**750**	NA	20 U	**120** J	93 U	**190**	**420**	**1,100**	**1,300**	**240**
Benzo(g,h,i)perylene	670	720	**290**	NA	**95**	59 UJ	**8,800**	**430**	NA	20 U	**120** J	93 U	160 U	**210**	**760**	**490**	**74**
Benzo(k)fluoranthene	3,200	3,600	**450**	NA	**190**	59 U	**14,000**	**650**	NA	**20**	**140** J	**59** J	**180**	**640**	**1,200**	**1,400**	**250**
Chrysene	1,400	2,800	**730**	NA	**220**	**35** J	**17,000**	**640**	NA	**20**	**200**	**72** J	**280**	**560**	**1,400**	**1,400**	**240**
Dibenz(a,h)anthracene	230	540	200 U	NA	88 U	59 UJ	**2,100**	**110**	NA	20 U	170 U	93 U	160 U	110 U	**250**	**170**	58 U
Fluoranthene	1,700	2,500	**1,000**	NA	**380**	59 U	**9,900**	**480**	NA	**30**	**220**	**93**	**620**	**990**	**2,100**	**3,300**	**440**
Indeno(1,2,3-cd)pyrene	600	690	**160** J	NA	**83** J	59 UJ	**8,300**	**390**	NA	20 U	170 U	93 U	160 U	**180**	**640**	**440**	**61**
Pyrene	2,600	3,300	**1,200**	NA	**340**	59 U	**9,800**	**450**	NA	**29**	**300**	**110**	**450**	**900**	**1,800**	**3,100**	**440**
Phthalates (ug/kg DW)																	
Bis(2-ethylhexyl)phthalate	1,300	1,900	**13,000**	NA	**780**	**220**	**20,000**	**860**	NA	**190** B	**3,400**	**7,300**	**4,000**	**3,200** B	**4,900** B	**3,300**	**1,500**
Butylbenzylphthalate	63	900	**260**	NA	88 U	59 U	**1,200**	**63**	NA	**29**	**120** J	**420**	**400**	110 U	**160**	**130**	**110**
Diethylphthalate	200	200	200 U	NA	88 U	**49** J	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
Dimethylphthalate	71	160	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
Di-n-butylphthalate	1,400	1,400	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	**170** J	93 U	160 U	110 U	**150** U	69 U	58 U
Di-n-octyl phthalate	6,200	--	**880**	NA	88 U	59 U	**880**	**40** J	NA	20 U	**170**	**91** J	160 U	**330**	**360**	**200**	**79**
PCBs (ug/kg DW)																	
Aroclor 1016			20 U	38 U	20 U	20 U	20 U	20 U	24 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor 1221			20 U	38 U	20 U	20 U	20 U	20 U	24 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor 1232			20 U	38 U	20 U	20 U	20 U	20 U	24 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor 1242			20 U	38 U	20 U	20 U	**120**	20 U	24 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor 1248			20 U	38 U	20 U	20 U	20 U	**42**	**50**	20 U	20 U	20 U	**40**	20 U	50 Y	20 U	19 U
Aroclor 1254			**35**	**43**	20 U	20 U	**99**	20 U	**94**	20 U	**31**	**22**	**30**	**120**	**100**	20 U	19 U
Aroclor 1260			**22**	38 U	20 U	20 U	**60**	20 U	**120**	20 U	29	20 U	20 U	50 Y	20 U	20 U	19 U
Total PCBs	130	1,000	**57**	**43**	20 U	20 U	**279**	**42**	**264**	20 U	**31**	**22**	**70**	**120**	**100**	20 U	19 U
Other organic compounds (ug/kg DW)																	
1,2,4-Trichlorobenzene			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
1,2-Dichlorobenzene			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
1,3-Dichlorobenzene			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
1,4-Dichlorobenzene	110	110	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
2,2'-Oxybis(1-chloropropane)			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
2,4,5-Trichlorophenol			1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
2,4,6-Trichlorophenol			1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
2,4-Dichlorophenol			1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U

Table 2: Ecology interagency agreement sediment trap samples (dry weight).

Station ID			96-ST3	HC-ST1	KC1-ST1	KC2-ST1	KCJ-ST1
Lab Ref			OY94	OV62	OS39	OS39	OS39
Type			Trap	Trap	Trap	Trap	Trap
Outfall			S 96th St SD	Hamm Creek	KCIA SD#2	KCIA SD#1	KCIA-Jorgensen SD
Date	SQS/ LAET	CSL/ 2LAET	05/13/09	04/15/09	03/26/09	03/26/09	03/26/09
Total solids (%)			71.7	74.1	55.2	36	NA
Total organic carbon (%)			1.36	1.35	0.805	6.52	NA
Metals (mg/kg)							
Arsenic	57	93	6 UJ	**6** J	8 UJ	30 UJ	NA
Copper	390	390	**15.8** J	**15.8** J	**16.9** J	**102** J	NA
Lead	450	530	**10** J	**12** J	**14** J	**110** J	NA
Mercury	0.41	0.59	**0.06** J	**0.03** J	0.06 UJ	**0.20** J	NA
Zinc	410	960	**53** J	**72** J	**51** J	**559** J	NA
Total petroleum hydrocarbons (mg/kg)							
TPH-diesel	2,000[b]		68 U	68 U	NA	NA	NA
TPH-oil	2,000[b]		140 U	140 U	NA	NA	NA
LPAH (ug/kg DW)							
Acenaphthene	500	500	19 U	20 U	59 U	**160** J	NA
Acenaphthylene	1,300	1,300	19 U	20 U	59 U	180 U	NA
Anthracene	960	960	19 U	20 U	**66**	**310**	NA
Fluorene	540	540	19 U	20 U	59 U	**170** J	NA
Naphthalene	2,100	2,100	19 U	20 U	59 U	180 U	NA
Phenanthrene	1,500	1,500	19 U	**21**	**630**	**3,200**	NA
HPAH (ug/kg DW)							
Benzo(a)anthracene	1,300	1,600	19 U	20 U	**500**	**2,100**	NA
Benzo(a)pyrene	1,600	1,600	19 U	20 U	**550**	**2,600**	NA
Benzo(b)fluoranthene	3,200	3,600	19 U	20 U	**820**	**3,900**	NA
Benzo(g,h,i)perylene	670	720	19 U	20 U	**530**	**2,100**	NA
Benzo(k)fluoranthene	3,200	3,600	19 U	20 U	**750**	**2,700**	NA
Chrysene	1,400	2,800	**11** J	20 U	**850**	**3,800**	NA
Dibenz(a,h)anthracene	230	540	19 U	20 U	**170**	**800**	NA
Fluoranthene	1,700	2,500	**18** J	**31**	**1,500**	**7,300**	NA
Indeno(1,2,3-cd)pyrene	600	690	19 U	20 U	**500**	**2,100**	NA
Pyrene	2,600	3,300	**16** J	**36**	**1,200**	**5,300**	NA
Phthalates (ug/kg DW)							
Bis(2-ethylhexyl)phthalate	1,300	1,900	43 U	**82**	**190**	**3,700**	NA
Butylbenzylphthalate	63	900	19 U	20 U	59 U	180 U	NA
Diethylphthalate	200	200	33 U	20 U	59 U	180 U	NA
Dimethylphthalate	71	160	19 U	20 U	59 U	180 U	NA
Di-n-butylphthalate	1,400	1,400	**25**	20 U	59 U	180 U	NA
Di-n-octyl phthalate	6,200	--	19 U	20 U	**40** J	**110** J	NA
PCBs (ug/kg DW)							
Aroclor 1016			20 U	20 U	20 U	20 U	1,800 U
Aroclor 1221			20 U	20 U	20 U	20 U	1,800 U
Aroclor 1232			20 U	20 U	20 U	20 U	1,800 U
Aroclor 1242			20 U	20 U	20 U	20 U	1,800 U
Aroclor 1248			20 U	20 U	20 U	20 U	1,800 U
Aroclor 1254			20 U	20 U	20 U	**32**	**11,000**
Aroclor 1260			20 U	20 U	20 U	**25**	1,800 U
Total PCBs	130	1,000	20 U	20 U	20 U	**57**	**11,000**
Other organic compounds (ug/kg DW)							
1,2,4-Trichlorobenzene			19 U	20 U	59 U	180 U	NA
1,2-Dichlorobenzene			19 U	20 U	59 U	180 U	NA
1,3-Dichlorobenzene			19 U	20 U	59 U	180 U	NA
1,4-Dichlorobenzene	110	110	19 U	20 U	59 U	180 U	NA
2,2'-Oxybis(1-chloropropane)			19 U	20 U	59 U	180 U	NA
2,4,5-Trichlorophenol			97 U	100 U	300 U	920 U	NA
2,4,6-Trichlorophenol			97 U	100 U	300 U	920 U	NA
2,4-Dichlorophenol			97 U	100 U	300 U	920 U	NA

Table 2: Ecology interagency agreement sediment trap samples (dry weight).

Station ID			1st-ST1	1st-ST2	1st-ST3	DK-ST1	ID-ST1	ID-ST2	7th-ST1	7th-ST2	7th-ST3	HP-ST4	HP-ST6	HP-ST7	KN-ST1	96-ST1	96-ST2
Lab Ref			OP80	OP80	OQ56	OP80	OP80	OP80	OR05	OR05	OQ56	OQ56	OV62	OR05	OR05	OW77	OW77
Type			Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap	Trap
Outfall			1st Ave S SD	1st Ave S SD	1st Ave S SD	SW Idaho SD	SW Idaho SD	SW Idaho SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	Highland Park Wy SD	Highland Park Wy SD	1st Ave S SD	SW Kenny SD	S 96th St SD	S 96th St SD
Date	SQS/ LAET	CSL/ 2LAET	03/06/09	03/06/09	03/12/09	03/06/09	03/06/09	03/06/09	03/17/09	03/17/09	03/12/09	03/12/09	04/15/09	03/17/09	03/17/09	04/24/09	04/24/09
2,4-Dimethylphenol[a]	29	29	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
2,4-Dinitrophenol			2,000 U	NA	880 U	590 U	5,100 U	590 U	NA	200 U	1,700 U	930 U	1,600 U	1,100 U	1,500 U	690 U	580 U
2,4-Dinitrotoluene			1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
2,6-Dinitrotoluene			1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
2-Chloronaphthalene			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
2-Chlorophenol			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
2-Methylnaphthalene			**160** J	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	**150**	58 U
2-Methylphenol[a]	63	63	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
2-Nitroaniline			1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
2-Nitrophenol			1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
3,3'-Dichlorobenzidine			1,000 U	NA	440 U	300 UJ	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
3-Nitroaniline			1,000 U	NA	440 U	300 UJ	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
4,6-Dinitro-2-methylphenol			2,000 U	NA	880 U	590 U	5,100 U	590 U	NA	200 U	1,700 U	930 U	1,600 U	1,100 U	1,500 U	690 U	580 U
4-Bromophenyl-phenylether			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
4-Chloro-3-methylphenol			1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
4-Chloroaniline			1,000 U	NA	440 U	300 UJ	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
4-Chlorophenyl-phenylether			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
4-Methylphenol[a]	670	670	**640**	NA	**1,500**	**200**	**1,400**	59 U	NA	20 U	170 U	**3,400**	160 U	**1,400**	150 U	**2,500**	**480**
4-Nitroaniline			1,000 U	NA	440 U	300 UJ	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
4-Nitrophenol			1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
Benzoic acid[a]	650	650	2,000 U	NA	880 U	590 U	5,100 U	590 U	NA	**810**	1,700 U	930 U	1,600 U	1,100 U	1,500 U	690 U	580 U
Benzyl alcohol[a]	57	73	200 U	NA	88 U	59 U	510 U	59 U	NA	**250**	170 U	93 U	160 U	110 U	150 U	69 U	**92**
bis(2-Chloroethoxy) methane			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
Bis-(2-chloroethyl) ether			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
Carbazole			200 U	NA	88 U	59 U	**990**	**47** J	NA	20 U	170 U	93 U	160 U	110 U	150	**310**	58 U
Dibenzofuran	540	540	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	**110**	58 U
Hexachlorobenzene	22	70	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
Hexachlorobutadiene	11	120	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
Hexachlorocyclopentadiene			1,000 U	NA	440 U	300 UJ	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
Hexachloroethane			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
Isophorone			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
Nitrobenzene			200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
N-Nitroso-di-n-propylamine			1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
N-Nitrosodiphenylamine	28	40	200 U	NA	88 U	59 U	510 U	59 U	NA	20 U	170 U	93 U	160 U	110 U	150 U	69 U	58 U
Pentachlorophenol[a]	360	690	1,000 U	NA	440 U	300 U	2,500 U	300 U	NA	99 U	850 U	460 U	790 U	550 U	760 U	350 U	290 U
Phenol[a]	420	1,200	200 U	NA	**65** J	59 U	510 U	59 U	NA	**130**	170 U	**190**	160 U	**140**	150 U	**210** B	58 U

Concentration exceeds SQS/LAET
Concentration exceeds CSL/2LAET

Table 2: Ecology interagency agreement sediment trap samples (dry weight).

Station ID			96-ST3	HC-ST1	KC1-ST1	KC2-ST1	KCJ-ST1
Lab Ref			OY94	OV62	OS39	OS39	OS39
Type			Trap	Trap	Trap	Trap	Trap
Outfall			S 96th St SD	Hamm Creek	KCIA SD#2	KCIA SD#1	KCIA-Jorgensen SD
Date	SQS/ LAET	CSL/ 2LAET	05/13/09	04/15/09	03/26/09	03/26/09	03/26/09
2,4-Dimethylphenol[a]	29	29	19 U	20 U	59 U	180 U	NA
2,4-Dinitrophenol			190 U	200 U	590 U	1,800 U	NA
2,4-Dinitrotoluene			97 U	100 U	300 U	920 U	NA
2,6-Dinitrotoluene			97 U	100 U	300 U	920 U	NA
2-Chloronaphthalene			19 U	20 U	59 U	180 U	NA
2-Chlorophenol			19 U	20 U	59 U	180 U	NA
2-Methylnaphthalene			19 U	20 U	59 U	180 U	NA
2-Methylphenol[a]	63	63	19 U	20 U	59 U	180 U	NA
2-Nitroaniline			97 U	100 U	300 U	920 U	NA
2-Nitrophenol			97 U	100 U	300 U	920 U	NA
3,3'-Dichlorobenzidine			97 U	100 U	300 U	920 U	NA
3-Nitroaniline			97 U	100 U	300 U	920 U	NA
4,6-Dinitro-2-methylphenol			190 U	200 U	590 U	1,800 U	NA
4-Bromophenyl-phenylether			19 U	20 U	59 U	180 U	NA
4-Chloro-3-methylphenol			97 U	100 U	300 U	920 U	NA
4-Chloroaniline			97 U	100 U	300 U	920 U	NA
4-Chlorophenyl-phenylether			19 U	20 U	59 U	180 U	NA
4-Methylphenol[a]	670	670	19 U	20 U	59 U	180 U	NA
4-Nitroaniline			97 U	100 U	300 U	920 U	NA
4-Nitrophenol			97 U	100 U	300 U	920 U	NA
Benzoic acid[a]	650	650	190 U	200 U	590 U	1,800 U	NA
Benzyl alcohol[a]	57	73	19 U	20 U	59 U	180 U	NA
bis(2-Chloroethoxy) methane			19 U	20 U	59 U	180 U	NA
Bis-(2-chloroethyl) ether			19 U	20 U	59 U	180 U	NA
Carbazole			19 U	20 U	**160**	**610**	NA
Dibenzofuran	540	540	19 U	20 U	59 U	**110** J	NA
Hexachlorobenzene	22	70	19 U	20 U	59 U	180 U	NA
Hexachlorobutadiene	11	120	19 U	20 U	59 U	180 U	NA
Hexachlorocyclopentadiene			97 U	100 U	300 U	920 U	NA
Hexachloroethane			19 U	20 U	59 U	180 U	NA
Isophorone			19 U	20 U	59 U	180 U	NA
Nitrobenzene			19 U	20 U	59 U	180 U	NA
N-Nitroso-di-n-propylamine			97 U	100 U	300 U	920 U	NA
N-Nitrosodiphenylamine	28	40	19 U	20 U	59 U	180 U	NA
Pentachlorophenol[a]	360	690	97 U	100 U	300 U	920 U	NA
Phenol[a]	420	1,200	19 U	20 U	59 U	**140** J	NA

Table 3: Ecology interagency agreement catch basin samples (dry weight).

Station ID			RCB1	RCB36	RCB37	RCB170	RCB200a	RCB200b	RCB201	RCB202	RCB203	RCB204	RCB205	RCB206	RCB207	RCB208
Lab Ref			OB72	OB72	OL20	PA69	NM74	OR05	OW77	OR05	OR05	OS39	OS39	OV62	OW77	OW77
Type			RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	Dirt	RCB	RCB
Outfall			Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	7th Ave S SD	SW Dakota SD/ditch	2nd Ave S SD	2nd Ave S SD	2nd Ave S SD	2nd Ave S SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	16th Ave S SD	16th Ave S SD
Date	SQS/ LAET	CSL/ 2LAET	11/25/08	11/25/08	02/04/09	05/28/09	08/28/08	03/17/09	04/24/09	03/17/09	03/17/09	03/26/09	03/26/09	04/15/09	04/24/09	04/24/09
Total solids (%)			17.3	79	NA	42.2	77.7	69	88.6	63	64.3	NA	NA	NA	77.6	76.9
Total organic carbon (%)			14.7	5.29	NA	7.16	4.72 J	2.73	1.83	5.5	4.21	NA	NA	NA	3.36	3.4
Metals (mg/kg)																
Arsenic	57	93	**10**	**12**	NA	**36** J	**30**	**8**	**7**	8 U	**11**	6 UJ	20 UJ	**87**	6 U	**7**
Copper	390	390	**162**	**126**	NA	**161** J	**101**	**98.4**	**80.4**	**124**	**131**	**38.4** J	**203** J	**139**	**112**	**105**
Lead	450	530	**220**	**46**	NA	**200** J	**112**	**60**	**43**	**80**	**521**	**34** J	**135** J	**45**	**88**	**75**
Mercury	0.41	0.59	**0.2**	**0.26**	NA	**0.08** J	0.04 U	**0.13**	**0.06**	0.08 U	**0.22**	0.05 UJ	**0.07** J	**0.08**	**0.09**	**0.10**
Zinc	410	960	**1,330**	**292**	NA	**289** J	**424**	**311**	**234**	**457**	**521**	**135** J	**406** J	**240**	**363**	**374**
Total petroleum hydrocarbons (mg/kg)																
TPH-diesel	2,000[b]		**410**	**650**	NA	**480**	**110**	**91**	**100**	**1,600**	**440**	NA	NA	NA	**190**	**230**
TPH-oil	2,000[b]		**2,500**	**2,700**	NA	**3,200**	**330**	**810**	**590**	**6,600**	**3,200**	NA	NA	NA	**1,100**	**1,300**
LPAH (ug/kg DW)																
Acenaphthene	500	500	**100**	**72**	NA	230 U	19 U	87 U	59 U	**230**	120 U	NA	NA	NA	58 U	60 U
Acenaphthylene	1,300	1,300	96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Anthracene	960	960	**330**	**3,000**	NA	230 U	**27**	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Fluorene	540	540	**140**	**520**	NA	230 U	19 U	87 U	59 U	**220**	120 U	NA	NA	NA	58 U	60 U
Naphthalene	2,100	2,100	**59** J	**110**	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Phenanthrene	1,500	1,500	**2,800**	**2,000**	NA	**180** J	**100**	87 U	59 U	**880**	**340**	NA	NA	NA	**270**	**300**
HPAH (ug/kg DW)																
Benzo(a)anthracene	1,300	1,600	**2,400**	**300**	NA	**140** J	**120**	87 U	59 U	**340**	**220**	NA	NA	NA	**240**	**270**
Benzo(a)pyrene	1,600	1,600	**2,800**	**700**	NA	**180** J	**150**	87 U	59 U	**350**	**270**	NA	NA	NA	**300**	**340**
Benzo(b)fluoranthene	3,200	3,600	**3,600**	**470**	NA	**200** J	**200**	87 U	**74** J	**480**	**300**	NA	NA	NA	**300**	**450**
Benzo(g,h,i)perylene	670	720	**1,200**	**240**	NA	**140** J	**33**	87 U	59 U	200 U	**140**	NA	NA	NA	**240** J	**260** J
Benzo(k)fluoranthene	3,200	3,600	**2,100**	**610**	NA	**200** J	**170**	**140**	**110** J	**490**	**360**	NA	NA	NA	**450**	**450**
Chrysene	1,400	2,800	**3,400**	**1,200**	NA	**510**	**180**	**140**	**93**	**690**	**390**	NA	NA	NA	**400**	**400**
Dibenz(a,h)anthracene	230	540	**510**	**54**	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Fluoranthene	1,700	2,500	**6,000**	**1,700**	NA	**380**	**320**	**160**	**130**	**1,100**	**570**	NA	NA	NA	**620**	**640**
Indeno(1,2,3-cd)pyrene	600	690	**1,200**	**190**	NA	230 U	**32**	87 U	59 U	200 U	120 U	NA	NA	NA	**170** J	**180** J
Pyrene	2,600	3,300	**4,700**	**1,100**	NA	**260**	**260**	**180**	**200**	**1,200**	**580**	NA	NA	NA	**910**	**960**
Phthalates (ug/kg DW)																
Bis(2-ethylhexyl)phthalate	1,300	1,900	**4,900**	**14,000**	NA	**2,200** B	**880**	**2,400** B	**980**	**18,000** B	**5,300** B	NA	NA	NA	**1,500**	**1,300**
Butylbenzylphthalate	63	900	**1,600**	**1,600**	NA	230 U	**28**	**190**	**140**	**410**	**450**	NA	NA	NA	**150**	**220**
Diethylphthalate	200	200	96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Dimethylphthalate	71	160	96 U	**650**	NA	**310**	19 U	87 U	59 U	200 U	**120**	NA	NA	NA	58 U	**78**
Di-n-butylphthalate	1,400	1,400	**200**	**150**	NA	230 U	19 U	87 U	59 U	**370**	**170**	NA	NA	NA	58 U	60 U
Di-n-octyl phthalate	6,200	--	**400**	**730**	NA	**340**	**43**	87 U	**120**	**1,600**	**590**	NA	NA	NA	**110**	**120**
PCBs (ug/kg DW)																
Aroclor 1016			20 U	20 U	58 U	38 U	20 U	20 U	17 U	20 U	19 U	NA	NA	NA	96 U	98 U
Aroclor 1221			20 U	20 U	58 U	38 U	20 U	20 U	17 U	20 U	19 U	NA	NA	NA	96 U	98 U
Aroclor 1232			20 U	20 U	58 U	38 U	20 U	20 U	17 U	20 U	19 U	NA	NA	NA	96 U	98 U
Aroclor 1242			20 U	20 U	58 U	38 U	20 U	20 U	17 U	20 U	19 U	NA	NA	NA	96 U	98 U
Aroclor 1248			20 U	39 Y	58 U	**41**	**30**	20 U	17 U	20 U	**30**	NA	NA	NA	96 U	98 U
Aroclor 1254			20 U	**68**	**210**	**58**	**68**	**31**	17 U	**55**	**77**	NA	NA	NA	96 U	98 U
Aroclor 1260			20 U	**33**	**190**	**110** J	**35**	**31**	**26**	**34** J	**95**	NA	NA	NA	**220**	**190**
Total PCBs	130	1,000	20 U	**101**	**400**	**209** J	**133**	**62**	**26**	**89** J	**202**	NA	NA	NA	**220**	**190**
Other organic compounds (ug/kg DW)																
1,2,4-Trichlorobenzene			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
1,2-Dichlorobenzene			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
1,3-Dichlorobenzene			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
1,4-Dichlorobenzene	110	110	96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
2,2'-Oxybis(1-chloropropane)			96 U	38 U	NA	230 U	19 U	87 U	59 U	590	120 U	NA	NA	NA	58 U	60 U
2,4,5-Trichlorophenol			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
2,4,6-Trichlorophenol			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
2,4-Dichlorophenol			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U

Table 3: Ecology interagency agreement catch basin samples (dry weight).

Station ID			RCB209	RCB210	RCB211	RCB212	RCB213	RCB214	RCB215	RCB216	RCB217	RCB218	RCB219	RCB220	RCB221	RCB222
Lab Ref			OW77	OZ57	PA21	PA21	PA42	PA42	PA57	PA57	PA98	PA98	PB04	PB04	PB20	PB20
Type			RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	Dirt	RCB	RCB	RCB	RCB
Outfall			2nd Ave S SD	16th Ave S bridge (west)	S Brighton CSO/SD	S Brighton SD	7th Ave S SD	7th Ave S SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	SW Idaho SD	SW Idaho SD	S96th St SD	S 96th St SD
Date	SQS/ LAET	CSL/ 2LAET	04/24/09	05/19/09	05/26/09	05/26/09	05/27/09	05/27/09	05/28/09	05/28/09	06/02/09	06/02/09	06/02/09	06/02/09	06/03/09	06/03/09
Total solids (%)			89.5	49.2	59.3	59.2	74.1	74.2	78.1	78.4	44.2	97.9	72.2	73.5	85.6	76.3
Total organic carbon (%)			1.97	6.77	7.11	6.52	6.2	4.54	4.5	4.49	13.5	8.67	4.53	6.06	0.408	0.567
Metals (mg/kg)																
Arsenic	57	93	**10**	**20** J	**23** J	**21** J	**17** J	**15** J	7 UJ	**6** J	**3** J	**7.4** J	**9** J	**8** J	**9** J	**8** J
Copper	390	390	**225**	**228** J	**230** J	**186** J	**127** J	**98** J	**78** J	**69.5** J	**183** J	**124** J	**25.1** J	**23.6** J	**39.6** J	**26.2** J
Lead	450	530	**52**	**104** J	**170** J	**183** J	**116** J	**91** J	**59** J	**43** J	**1,300** J	**433** J	**20** J	**7** J	**9** J	**20** J
Mercury	0.41	0.59	**0.13**	**0.06** J	**0.13** J	**0.13** J	**0.09** J	**0.08** J	**0.08** J	**0.03** J	**2.20** J	**0.28** J	0.03 UJ	0.03 UJ	0.02 UJ	0.02 UJ
Zinc	410	960	**427**	**916** J	**938** J	**949** J	**249** J	**230** J	**721** J	**510** J	**495** J	**356** J	**80** J	**58** J	**75** J	**231** J
Total petroleum hydrocarbons (mg/kg)																
TPH-diesel	2,000[b]		**110**	**590**	**3,000**	**4,800**	**840**	**700**	**1,000**	**1,200**	**2,000**	**780**	**150**	**160**	57 U	61 U
TPH-oil	2,000[b]		**610**	**3,500**	**13,000**	**20,000**	**4,000**	**3,600**	**4,600**	**4,800**	**5,400**	**3,000**	**980**	**940**	110 U	120 U
LPAH (ug/kg DW)																
Acenaphthene	500	500	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Acenaphthylene	1,300	1,300	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Anthracene	960	960	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Fluorene	540	540	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Naphthalene	2,100	2,100	60 U	230 U	**180** J	**210** J	160 U	140 U	210 U	220 U	**45** J	59 U	66 U	**34** J	19 U	19 U
Phenanthrene	1,500	1,500	**65**	**530**	**740**	**880**	**210**	**120** J	**560**	**520**	**270**	**140**	**62** J	**45** J	**14** J	**18** J
HPAH (ug/kg DW)																
Benzo(a)anthracene	1,300	1,600	60 U	**190** J	**400**	**440**	**130** J	**120** J	**420**	**350**	**85** J	**100**	**50** J	**35** J	19 U	**14** J
Benzo(a)pyrene	1,600	1,600	60 U	**160** J	**360**	**380**	**140** J	**120** J	**360**	**330**	**84** J	**110**	**58** J	**50** J	19 U	**17** J
Benzo(b)fluoranthene	3,200	3,600	**68** J	**310**	**500**	**610**	**180**	**150**	**380**	**360**	**130**	**140**	**85** J	**88** J	19 U	**26**
Benzo(g,h,i)perylene	670	720	60 U	**130** J	**360**	**380** J	**82** J	**72** J	**220**	**190** J	89 U	**66**	**60** J	**52** J	19 U	19 U
Benzo(k)fluoranthene	3,200	3,600	**79** J	**210** J	**500**	**610**	**180**	**150**	**380**	**250**	**120**	**140**	**85** J	**88** J	19 U	**20**
Chrysene	1,400	2,800	**98**	**500**	**1,200**	**1,400**	**380**	**320**	**990**	**860**	**190**	**200**	**130** J	**120** J	**10** J	**23**
Dibenz(a,h)anthracene	230	540	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Fluoranthene	1,700	2,500	**120**	**1,100**	**1,600**	**2,400**	**640**	**320**	**860**	**730**	**420**	**370**	**120** J	**92** J	**18** J	**42**
Indeno(1,2,3-cd)pyrene	600	690	60 U	230 U	**180** J	**220** J	160 U	140 U	**140** J	220 U	89 U	**37** J	**49** J	**34** J	19 U	19 U
Pyrene	2,600	3,300	**190**	**730**	**1,100**	**1,700**	**430**	**290**	**980**	**820**	**270**	**140**	**77** J	**61** J	**14** J	**29**
Phthalates (ug/kg DW)																
Bis(2-ethylhexyl)phthalate	1,300	1,900	**3,600**	**3,600**	**24,000**	**38,000**	**2,200**	**2,600**	**9,400**	**4,600**	**10,000**	**4,800**	**620** J	**780** J	**24**	**300**
Butylbenzylphthalate	63	900	**140**	**420**	**3,000**	**5,000**	**220**	**390**	**200** J	**160** J	**1,000**	**310**	66 U	58 U	19 U	19 U
Diethylphthalate	200	200	60 U	230 U	310 U	380 U	160 U	140 U	**200** J	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Dimethylphthalate	71	160	60 U	**190** J	310 U	380 U	**400**	**180**	210 U	220 U	**150**	**57** J	66 U	**60** J	19 U	19 U
Di-n-butylphthalate	1,400	1,400	**110**	**370**	**630**	**970**	160 U	140 U	**160** J	**530**	**11,000**	**4,200**	66 U	58 U	19 U	19 U
Di-n-octyl phthalate	6,200	--	**210**	**120** J	**2,900**	**4,800**	**340**	**200**	**1,300**	**200** J	**400** J	**1,300**	**85** J	**100** J	19 U	**31**
PCBs (ug/kg DW)																
Aroclor 1016			18 U	20 U	96 U	99 U	20 U	20 U	20 U	20 U	42 U	19 U	20 U	20 U	19 U	19 U
Aroclor 1221			18 U	20 U	96 U	99 U	20 U	20 U	20 U	20 U	42 U	19 U	20 U	20 U	19 U	19 U
Aroclor 1232			18 U	20 U	96 U	99 U	20 U	20 U	20 U	20 U	42 U	19 U	20 U	20 U	19 U	19 U
Aroclor 1242			18 U	20 U	96 U	99 U	**110**	**87**	20 U	20 U	42 U	19 U	20 U	20 U	19 U	19 U
Aroclor 1248			18 U	20 U	**180**	**210**	20 U	20 U	20 U	20 U	**100** J	**360**	20 U	20 U	19 U	19 U
Aroclor 1254			18 U	**84**	**180**	**240**	**76**	**55**	**37**	**24**	**210**	**550** J	20 U	20 U	19 U	19 U
Aroclor 1260			**24**	**180**	**110**	**150** J	**65**	**53**	**57**	**53**	**81**	**200**	20 U	20 U	19 U	19 U
Total PCBs	130	1,000	**24**	**264**	**470**	**600** J	**251**	**195**	**94**	**77**	**391** J	**1,110** J	20 U	20 U	19 U	19 U
Other organic compounds (ug/kg DW)																
1,2,4-Trichlorobenzene			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
1,2-Dichlorobenzene			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
1,3-Dichlorobenzene			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
1,4-Dichlorobenzene	110	110	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
2,2'-Oxybis(1-chloropropane)			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
2,4,5-Trichlorophenol			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
2,4,6-Trichlorophenol			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
2,4-Dichlorophenol			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U

Table 3: Ecology interagency agreement catch basin samples (dry weight).

Station ID			RCB223	RCB224	RCB175	CB142	CB143	CB144	CB145	CB146	CB147	CB148	CB149	CB150	CB202	CB203
Lab Ref			PB20	PB20	PB25	PA02	PA19	PA34	PA34	PA34	PA34	PA34	PA34	PA69	OZ76	OZ99
Type			RCB	CB	RCB	CB	CB	CB	Dirt	Dirt	Dirt	Dirt	Dirt	CB	CB	CB
Outfall			7th Ave S SD	Diagonal Ave S CSO/SD	2nd Ave S SD	Private storm drain	Private storm drain	8th Ave S (no SD)	8th Ave S (no SD)	8th Ave S (no SD)	8th Ave S (no SD)	8th Ave S (no SD)	8th Ave S (no SD)	1st Ave S (west side)	S River St SD	Diagonal Ave S SD
Date	SQS/ LAET	CSL/ 2LAET	06/03/09	06/03/09	06/04/09	05/21/09	05/26/09	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/28/09	05/20/09	05/21/09
Total solids (%)			63.1	84.1	87.7	62.6	69.8	40.6	85.3	93.3	98.6	94.7	99.7	60.3	60.9	64.3
Total organic carbon (%)			2.59	2.85	3.67	4.86	6.29	7.06	2.22	1.42	3.59	1.7	1.74	6.32	4.44	7.62
Metals (mg/kg)																
Arsenic	57	93	**11** J	**15** J	**20** J	**11.4** J	**7** J	**20** J	**20** J	**8** J	**10** J	**6** J	10 UJ	**30** J	**32** J	**9** J
Copper	390	390	**48.8** J	**116** J	**91.3** J	**288** J	**133** J	**668** J	**876** J	**48.7** J	**224** J	**83.2** J	**67.8** J	**181** J	**106** J	**63.3** J
Lead	450	530	**25** J	**73** J	**40** J	**235** J	**52** J	**1,180** J	**1,480** J	**71** J	**400** J	**155** J	**52** J	**110** J	**49** J	**56** J
Mercury	0.41	0.59	**0.07** J	**0.46** J	**0.06** J	**0.05** J	**0.07** J	**0.98** J	**1.13** J	**0.15** J	**0.41** J	**0.23** J	**0.03** J	**0.17** J	**0.04** J	**0.10** J
Zinc	410	960	**214** J	**184** J	**354** J	**882** J	**255** J	**948** J	**900** J	**97** J	**391** J	**130** J	**201** J	**2,140** J	**413** J	**322** J
Total petroleum hydrocarbons (mg/kg)																
TPH-diesel	2,000[b]		**100**	**970**	**470**	**680**	**4,900**	**3,700**	**760**	**190**	**530**	**400**	**84**	**1,300**	**640**	**170**
TPH-oil	2,000[b]		**510**	**1,000**	**2,200**	**3,400**	**12,000**	**4,500**	**2,100**	**600**	**2,200**	**940**	**760**	**8,200**	**2,800**	**1,200**
LPAH (ug/kg DW)																
Acenaphthene	500	500	39 U	**400**	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Acenaphthylene	1,300	1,300	39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Anthracene	960	960	39 U	**230**	110 U	**37** J	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	**120**	59 U
Fluorene	540	540	39 U	**980**	110 U	58 U	**250** J	**160** J	120 U	58 U	110 U	57 U	58 U	150 U	**77** J	59 U
Naphthalene	2,100	2,100	39 U	**470**	110 U	**32** J	**260** J	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Phenanthrene	1,500	1,500	**54**	**2,300**	**150**	**330**	**780**	**430**	**190**	**160**	**81** J	**94**	58 U	**340**	**610**	**42** J
HPAH (ug/kg DW)																
Benzo(a)anthracene	1,300	1,600	**65**	**110** J	**130**	**200**	**260** J	**200** J	**180**	**100**	**76** J	**58**	58 U	**270**	**320**	**59**
Benzo(a)pyrene	1,600	1,600	**85**	150 U	**170**	**180**	**220** J	**190** J	**190** J	**140** J	**93** J	**81** J	58 U	**280** J	**230**	**87**
Benzo(b)fluoranthene	3,200	3,600	**100**	**94** J	**200**	**280**	**230** J	**200** J	**200** J	**150** J	**92** J	**66** J	58 U	**310** J	**250**	**140**
Benzo(g,h,i)perylene	670	720	**41**	150 U	**73** J	**68**	**180** J	**160** J	**140** J	**73** J	**55** J	**36** J	58 U	**310** J	**160**	**50** J
Benzo(k)fluoranthene	3,200	3,600	**100**	**94** J	**200**	**210**	**230** J	**200** J	**200** J	**95** J	**92** J	**66** J	58 U	**310** J	**250**	**93**
Chrysene	1,400	2,800	**110**	**190**	**230**	**350**	**610**	**520**	**400**	**160**	**230**	**96**	**83**	**540**	**530**	**160**
Dibenz(a,h)anthracene	230	540	39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Fluoranthene	1,700	2,500	**150**	**360**	**310**	**1,100**	**700**	**560**	**450**	**300**	**200**	**140**	29 J	**1,000**	**980**	**99**
Indeno(1,2,3-cd)pyrene	600	690	**32** J	150 U	110 U	**63**	270 U	260 U	**110** J	**67** J	110 U	57 U	58 U	**220** J	**120** J	**32** J
Pyrene	2,600	3,300	**110**	**510**	**290**	**620**	**690**	**750**	**340**	**170**	**140**	**110**	58 U	**540**	**860**	**130**
Phthalates (ug/kg DW)																
Bis(2-ethylhexyl)phthalate	1,300	1,900	**200**	**6,000**	**1,900**	**4,100**	**22,000**	**14,000** B	**3,400** B	63 U	**2,000** B	290 U	360 U	**16,000** B	**2,800**	**2,100**
Butylbenzylphthalate	63	900	**170**	**110** J	**1,000**	**170**	**480**	**2,100**	**360**	58 U	**420**	57 U	58 U	**6,500**	**150**	**490**
Diethylphthalate	200	200	39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Dimethylphthalate	71	160	39 U	150 U	110 U	**32** J	270 U	260 U	120 U	58 U	110 U	57 U	**35** J	**540**	**120** J	**31** J
Di-n-butylphthalate	1,400	1,400	39 U	150 U	110 U	**230**	**530**	**420**	**220**	58 U	**100** J	57 U	58 U	**2,800**	**81** J	59 U
Di-n-octyl phthalate	6,200	--	**29** J	**260**	**110**	58 U	**1,200**	**850**	**170**	58 U	**98** J	57 U	**38** J	**1,800**	**150**	59 U
PCBs (ug/kg DW)																
Aroclor 1016			19 U	38 U	19 U	41 U	20 U	760 U	1,400 U	19 U	290 U	19 U	19 U	39 U	18 U	19 U
Aroclor 1221			19 U	38 U	19 U	41 U	20 U	760 U	1,400 U	19 U	290 U	19 U	19 U	39 U	18 U	19 U
Aroclor 1232			19 U	38 U	19 U	41 U	20 U	760 U	1,400 U	19 U	290 U	19 U	19 U	39 U	18 U	19 U
Aroclor 1242			19 U	38 U	19 U	41 U	20 U	760 U	1,400 U	19 U	290 U	19 U	19 U	39 U	18 U	19 U
Aroclor 1248			19 U	**61**	19 U	210 Y	**20**	760 U	1,400 U	19 U	290 U	19 U	19 U	39 U	18 U	19 U
Aroclor 1254			19 U	**57**	**20**	**850**	**30**	**1,800**	**3,800**	**52**	**590**	**130**	**26**	**78**	**32**	**45**
Aroclor 1260			**20**	**48**	**34**	**700**	25 Y	**1,800**	**3,100**	**130** J	**750**	**400**	**34**	**57**	**22**	**37**
Total PCBs	130	1,000	**20**	**166**	**54**	**1,550**	**50**	**3,600**	**6,900**	**182** J	**1,340**	**530**	**60**	**135**	**54**	**82**
Other organic compounds (ug/kg DW)																
1,2,4-Trichlorobenzene			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
1,2-Dichlorobenzene			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
1,3-Dichlorobenzene			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
1,4-Dichlorobenzene	110	110	39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
2,2'-Oxybis(1-chloropropane)			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
2,4,5-Trichlorophenol			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U
2,4,6-Trichlorophenol			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U
2,4-Dichlorophenol			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U

Table 3: Ecology interagency agreement catch basin samples (dry weight).

Station ID			CB204	CB205	CB206	CB207
Lab Ref			OZ99	PA42	PB20	PB20
Type			Dirt	CB	CB	CB
Outfall			Diagonal Ave S SD	S River St SD	Direct discharge	S Garden St SD
Date	SQS/ LAET	CSL/ 2LAET	05/21/09	05/27/09	06/03/09	06/03/09
Total solids (%)			78.9	62.6	48.2	82
Total organic carbon (%)			2.53	3.78	12.1	11
Metals (mg/kg)						
Arsenic	57	93	6 UJ	**27** J	**20.1** J	**60** J
Copper	390	390	**56.3** J	**94.8** J	**590** J	**7,990** J
Lead	450	530	**39** J	**44** J	**1,280** J	**2,240** J
Mercury	0.41	0.59	**0.09** J	**0.04** J	**2.96** J	**2.72** J
Zinc	410	960	**161** J	**346** J	**5,830** J	**13,300** J
Total petroleum hydrocarbons (mg/kg)						
TPH-diesel	2,000[b]		65 U	**910**	**9,000**	**5,200**
TPH-oil	2,000[b]		**300**	**4,700**	**28,000**	**15,000**
LPAH (ug/kg DW)						
Acenaphthene	500	500	20 U	180 U	**1,500**	740 U
Acenaphthylene	1,300	1,300	20 U	180 U	1,200 U	740 U
Anthracene	960	960	**12** J	**91** J	**3,800**	740 U
Fluorene	540	540	20 U	180 U	**1,900**	740 U
Naphthalene	2,100	2,100	20 U	180 U	**670** J	740 U
Phenanthrene	1,500	1,500	**45**	**490**	**19,000**	**2,100**
HPAH (ug/kg DW)						
Benzo(a)anthracene	1,300	1,600	**100**	**360**	**8,300**	**1,200**
Benzo(a)pyrene	1,600	1,600	**140**	**340**	**7,300**	**940**
Benzo(b)fluoranthene	3,200	3,600	**160**	**470**	**9,600**	**1,200**
Benzo(g,h,i)perylene	670	720	**63**	**200**	**1,900**	740 U
Benzo(k)fluoranthene	3,200	3,600	**130**	**420**	**9,600**	**1,200**
Chrysene	1,400	2,800	**180**	**740**	**16,000**	**1,800**
Dibenz(a,h)anthracene	230	540	**21**	180 U	1,200 U	740 U
Fluoranthene	1,700	2,500	**140**	**1,200**	**32,000**	**3,700**
Indeno(1,2,3-cd)pyrene	600	690	**63**	**130** J	**2,100**	740 U
Pyrene	2,600	3,300	**100**	**870**	**22,000**	**3,200**
Phthalates (ug/kg DW)						
Bis(2-ethylhexyl)phthalate	1,300	1,900	**220**	**7,400**	**99,000**	**62,000**
Butylbenzylphthalate	63	900	**71**	**170** J	**5,200**	**6,000**
Diethylphthalate	200	200	20 U	180 U	1,200 U	740 U
Dimethylphthalate	71	160	20 U	**160** J	**600** J	**1,400**
Di-n-butylphthalate	1,400	1,400	20 U	180 U	**5,800**	**2,300**
Di-n-octyl phthalate	6,200	--	20 U	**270**	**3,900**	**6,000**
PCBs (ug/kg DW)						
Aroclor 1016			19 U	20 U	120 U	470 U
Aroclor 1221			19 U	20 U	120 U	470 U
Aroclor 1232			19 U	20 U	120 U	470 U
Aroclor 1242			19 U	20 U	**3,500**	470 U
Aroclor 1248			19 U	20 U	120 U	**7,100**
Aroclor 1254			**29**	**34**	**1,600**	**8,600**
Aroclor 1260			**44**	**22**	**830**	**2,600** J
Total PCBs	130	1,000	**73**	**56**	**5,930**	**18,300** J
Other organic compounds (ug/kg DW)						
1,2,4-Trichlorobenzene			20 U	180 U	1,200 U	740 U
1,2-Dichlorobenzene			20 U	180 U	1,200 U	740 U
1,3-Dichlorobenzene			20 U	180 U	1,200 U	740 U
1,4-Dichlorobenzene	110	110	20 U	180 U	1,200 U	740 U
2,2'-Oxybis(1-chloropropane)			20 U	180 U	1,200 U	740 U
2,4,5-Trichlorophenol			98 U	910 U	5,900 U	3,700 U
2,4,6-Trichlorophenol			98 U	910 U	5,900 U	3,700 U
2,4-Dichlorophenol			98 U	910 U	5,900 U	3,700 U

Table 3: Ecology interagency agreement catch basin samples (dry weight).

Station ID			RCB1	RCB36	RCB37	RCB170	RCB200a	RCB200b	RCB201	RCB202	RCB203	RCB204	RCB205	RCB206	RCB207	RCB208
Lab Ref			OB72	OB72	OL20	PA69	NM74	OR05	OW77	OR05	OR05	OS39	OS39	OV62	OW77	OW77
Type			RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	Dirt	RCB	RCB
Outfall			Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	7th Ave S SD	SW Dakota SD/ditch	2nd Ave S SD	2nd Ave S SD	2nd Ave S SD	2nd Ave S SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	16th Ave S SD	16th Ave S SD
Date	SQS/ LAET	CSL/ 2LAET	11/25/08	11/25/08	02/04/09	05/28/09	08/28/08	03/17/09	04/24/09	03/17/09	03/17/09	03/26/09	03/26/09	04/15/09	04/24/09	04/24/09
2,4-Dimethylphenol[a]	29	29	96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
2,4-Dinitrophenol			960 U	380 U	NA	2,300 U	190 U	870 U	590 U	2,000 U	1,200 U	NA	NA	NA	580 U	600 U
2,4-Dinitrotoluene			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
2,6-Dinitrotoluene			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
2-Chloronaphthalene			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
2-Chlorophenol			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
2-Methylnaphthalene			96 U	**100**	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
2-Methylphenol[a]	63	63	96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
2-Nitroaniline			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
2-Nitrophenol			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
3,3'-Dichlorobenzidine			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
3-Nitroaniline			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
4,6-Dinitro-2-methylphenol			960 U	380 U	NA	2,300 U	190 U	870 U	590 U	2,000 U	1,200 U	NA	NA	NA	580 U	600 U
4-Bromophenyl-phenylether			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
4-Chloro-3-methylphenol			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
4-Chloroaniline			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
4-Chlorophenyl-phenylether			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
4-Methylphenol[a]	670	670	**1,800**	**1,200**	NA	230 U	19 U	87 U	59 U	**430**	120 U	NA	NA	NA	58 U	60 U
4-Nitroaniline			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
4-Nitrophenol			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
Benzoic acid[a]	650	650	960 U	**670**	NA	2,300 U	190 U	870 U	590 U	2,000 U	1,200 U	NA	NA	NA	580 U	600 U
Benzyl alcohol[a]	57	73	96 U	**84**	NA	230 U	19 U	87 U	59 U	200 U	**550**	NA	NA	NA	58 U	60 U
bis(2-Chloroethoxy) methane			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Bis-(2-chloroethyl) ether			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Carbazole			**520**	**1,500**	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Dibenzofuran	540	540	**53** J	**160**	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Hexachlorobenzene	22	70	96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Hexachlorobutadiene	11	120	96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Hexachlorocyclopentadiene			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
Hexachloroethane			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Isophorone			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Nitrobenzene			96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
N-Nitroso-di-n-propylamine			480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
N-Nitrosodiphenylamine	28	40	96 U	38 U	NA	230 U	19 U	87 U	59 U	200 U	120 U	NA	NA	NA	58 U	60 U
Pentachlorophenol[a]	360	690	480 U	190 U	NA	1,200 U	96 U	440 U	300 U	980 U	580 U	NA	NA	NA	290 U	300 U
Phenol[a]	420	1,200	96 U	**440**	NA	230 U	19 U	87 U	59 U	200 U	**130**	NA	NA	NA	58 U	60 U

Concentration exceeds SQS/LAET
Concentration exceeds CSL/2LAET

Table 3: Ecology interagency agreement catch basin samples (dry weight).

Station ID			RCB209	RCB210	RCB211	RCB212	RCB213	RCB214	RCB215	RCB216	RCB217	RCB218	RCB219	RCB220	RCB221	RCB222
Lab Ref			OW77	OZ57	PA21	PA21	PA42	PA42	PA57	PA57	PA98	PA98	PB04	PB04	PB20	PB20
Type			RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	Dirt	RCB	RCB	RCB	RCB
Outfall			2nd Ave S SD	16th Ave S bridge (west)	S Brighton CSO/SD	S Brighton SD	7th Ave S SD	7th Ave S SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	SW Idaho SD	SW Idaho SD	S96th St SD	S 96th St SD
Date	SQS/ LAET	CSL/ 2LAET	04/24/09	05/19/09	05/26/09	05/26/09	05/27/09	05/27/09	05/28/09	05/28/09	06/02/09	06/02/09	06/02/09	06/02/09	06/03/09	06/03/09
2,4-Dimethylphenol[a]	29	29	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
2,4-Dinitrophenol			600 U	2,300 U	3,100 U	3,800 U	1,600 U	1,400 U	2,100 U	2,200 U	890 U	590 U	660 U	580 U	190 U	190 U
2,4-Dinitrotoluene			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
2,6-Dinitrotoluene			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
2-Chloronaphthalene			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
2-Chlorophenol			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
2-Methylnaphthalene			60 U	230 U	**220** J	**500**	160 U	140 U	**140** J	**120** J	**65** J	59 U	66 U	58 U	19 U	19 U
2-Methylphenol[a]	63	63	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
2-Nitroaniline			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
2-Nitrophenol			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
3,3'-Dichlorobenzidine			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
3-Nitroaniline			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
4,6-Dinitro-2-methylphenol			600 U	2,300 U	3,100 U	3,800 U	1,600 U	1,400 U	2,100 U	2,200 U	890 U	590 U	660 U	580 U	190 U	190 U
4-Bromophenyl-phenylether			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
4-Chloro-3-methylphenol			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
4-Chloroaniline			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
4-Chlorophenyl-phenylether			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
4-Methylphenol[a]	670	670	60 U	**530**	310 U	**540**	160 U	100 J	**1,800**	**1,600**	**4,300**	59 U	**1,400** J	**1,700** J	19 U	19 U
4-Nitroaniline			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
4-Nitrophenol			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
Benzoic acid[a]	650	650	600 U	2,300 U	3,100 U	3,800 U	1,600 U	1,400 U	2,100 U	2,200 U	**780** J	590 U	660 U	580 U	190 U	190 U
Benzyl alcohol[a]	57	73	**210**	**620**	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	22 NJ
bis(2-Chloroethoxy) methane			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Bis-(2-chloroethyl) ether			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Carbazole			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Dibenzofuran	540	540	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Hexachlorobenzene	22	70	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Hexachlorobutadiene	11	120	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Hexachlorocyclopentadiene			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
Hexachloroethane			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Isophorone			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Nitrobenzene			60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
N-Nitroso-di-n-propylamine			300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
N-Nitrosodiphenylamine	28	40	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	89 U	59 U	66 U	58 U	19 U	19 U
Pentachlorophenol[a]	360	690	300 U	1,200 U	1,500 U	1,900 U	790 U	700 U	1,000 U	1,100 U	440 U	300 U	330 U	290 U	95 U	95 U
Phenol[a]	420	1,200	60 U	230 U	310 U	380 U	160 U	140 U	210 U	220 U	**120**	**56** J	**45** J	**64** J	19 U	19 U

Table 3: Ecology interagency agreement catch basin samples (dry weight).

Station ID			RCB223	RCB224	RCB175	CB142	CB143	CB144	CB145	CB146	CB147	CB148	CB149	CB150	CB202	CB203
Lab Ref			PB20	PB20	PB25	PA02	PA19	PA34	PA34	PA34	PA34	PA34	PA34	PA69	OZ76	OZ99
Type			RCB	CB	RCB	CB	CB	CB	Dirt	Dirt	Dirt	Dirt	Dirt	CB	CB	CB
Outfall			7th Ave S SD	Diagonal Ave S CSO/SD	2nd Ave S SD	Private storm drain	Private storm drain	8th Ave S (no SD)	8th Ave S (no SD)	8th Ave S (no SD)	8th Ave S (no SD)	8th Ave S (no SD)	8th Ave S (no SD)	1st Ave S (west side)	S River St SD	Diagonal Ave S SD
Date	SQS/ LAET	CSL/ 2LAET	06/03/09	06/03/09	06/04/09	05/21/09	05/26/09	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/28/09	05/20/09	05/21/09
2,4-Dimethylphenol[a]	29	29	39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
2,4-Dinitrophenol			390 U	1,500 U	1,100 U	580 U	2,700 U	2,600 U	1,200 U	580 U	1,100 U	570 U	580 U	1,500 U	1,200 U	590 U
2,4-Dinitrotoluene			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U
2,6-Dinitrotoluene			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U
2-Chloronaphthalene			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
2-Chlorophenol			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
2-Methylnaphthalene			39 U	**3,600**	110 U	58 U	**1,000**	**180** J	120 U	**58** J	110 U	**47** J	58 U	**86** J	120 U	59 U
2-Methylphenol[a]	63	63	39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	**110** J	120 U	59 U
2-Nitroaniline			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U
2-Nitrophenol			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U
3,3'-Dichlorobenzidine			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 R	740 U	590 U	300 U
3-Nitroaniline			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 R	740 U	590 U	300 U
4,6-Dinitro-2-methylphenol			390 U	1,500 U	1,100 U	580 U	2,700 U	2,600 U	1,200 U	580 U	1,100 U	570 U	580 R	1,500 U	1,200 U	590 U
4-Bromophenyl-phenylether			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
4-Chloro-3-methylphenol			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U
4-Chloroaniline			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 R	740 U	590 U	300 U
4-Chlorophenyl-phenylether			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
4-Methylphenol[a]	670	670	39 U	150 U	110 U	**570**	**1,700**	**2,300**	**92** J	58 U	110 U	57 U	58 U	**13,000**	**620**	59 U
4-Nitroaniline			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U
4-Nitrophenol			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 R	740 U	590 U	300 U
Benzoic acid[a]	650	650	390 U	1,500 U	1,100 U	580 U	2,700 U	2,600 U	1,200 U	580 U	1,100 U	570 U	580 R	**1,900**	1,200 U	590 U
Benzyl alcohol[a]	57	73	39 U	150 U	110 U	58 U	820	**510**	120 U	58 U	110 U	57 U	58 U	5,100 Y	120 U	59 U
bis(2-Chloroethoxy) methane			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Bis-(2-chloroethyl) ether			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Carbazole			39 U	**110** J	110 U	**61**	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	74 J	59 U
Dibenzofuran	540	540	39 U	**340**	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Hexachlorobenzene	22	70	39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Hexachlorobutadiene	11	120	39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Hexachlorocyclopentadiene			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U
Hexachloroethane			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Isophorone			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Nitrobenzene			39 U	150 U	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	1,300 Y	120 U	59 U
N-Nitroso-di-n-propylamine			200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 U	740 U	590 U	300 U
N-Nitrosodiphenylamine	28	40	39 U	940 Y	110 U	58 U	270 U	260 U	120 U	58 U	110 U	57 U	58 U	150 U	120 U	59 U
Pentachlorophenol[a]	360	690	200 U	770 U	550 U	290 U	1,400 U	1,300 U	620 U	290 U	530 U	280 U	290 R	740 U	590 U	300 U
Phenol[a]	420	1,200	39 U	150 U	110 U	**57** J	270 U	**210** J	120 U	58 U	110 U	57 U	58 U	**1,000**	120 U	59 U

Table 3: Ecology interagency agreement catch basin samples (dry weight).

Station ID			CB204	CB205	CB206	CB207
Lab Ref			OZ99	PA42	PB20	PB20
Type			Dirt	CB	CB	CB
Outfall			Diagonal Ave S SD	S River St SD	Direct discharge	S Garden St SD
Date	SQS/ LAET	CSL/ 2LAET	05/21/09	05/27/09	06/03/09	06/03/09
2,4-Dimethylphenol[a]	29	29	20 U	180 U	1,200 U	740 U
2,4-Dinitrophenol			200 U	1,800 U	12,000 U	7,400 U
2,4-Dinitrotoluene			98 U	910 U	5,900 U	3,700 U
2,6-Dinitrotoluene			98 U	910 U	5,900 U	3,700 U
2-Chloronaphthalene			20 U	180 U	1,200 U	740 U
2-Chlorophenol			20 U	180 U	1,200 U	740 U
2-Methylnaphthalene			20 U	180 U	**1,000** J	740 U
2-Methylphenol[a]	63	63	20 U	180 U	1,200 U	740 U
2-Nitroaniline			98 U	910 U	5,900 U	3,700 U
2-Nitrophenol			98 U	910 U	5,900 U	3,700 U
3,3'-Dichlorobenzidine			98 U	910 U	5,900 U	3,700 U
3-Nitroaniline			98 U	910 U	5,900 U	3,700 U
4,6-Dinitro-2-methylphenol			200 U	1,800 U	12,000 U	7,400 U
4-Bromophenyl-phenylether			20 U	180 U	1,200 U	740 U
4-Chloro-3-methylphenol			98 U	910 U	5,900 U	3,700 U
4-Chloroaniline			98 U	910 U	5,900 U	3,700 U
4-Chlorophenyl-phenylether			20 U	180 U	1,200 U	740 U
4-Methylphenol[a]	670	670	20 U	**240**	**1,800**	740 U
4-Nitroaniline			98 U	910 U	5,900 U	3,700 U
4-Nitrophenol			98 U	910 U	5,900 U	3,700 U
Benzoic acid[a]	650	650	200 U	1,800 U	12,000 U	7,400 U
Benzyl alcohol[a]	57	73	20 U	180 U	1,200 U	740 U
bis(2-Chloroethoxy) methane			20 U	180 U	1,200 U	740 U
Bis-(2-chloroethyl) ether			20 U	180 U	1,200 U	740 U
Carbazole			20 U	180 U	**2,400**	740 U
Dibenzofuran	540	540	20 U	180 U	**1,000** J	740 U
Hexachlorobenzene	22	70	20 U	180 U	1,200 U	740 U
Hexachlorobutadiene	11	120	20 U	180 U	1,200 U	740 U
Hexachlorocyclopentadiene			98 U	910 U	5,900 U	3,700 U
Hexachloroethane			20 U	180 U	1,200 U	740 U
Isophorone			20 U	180 U	1,200 U	740 U
Nitrobenzene			20 U	180 U	1,200 U	740 U
N-Nitroso-di-n-propylamine			98 U	910 U	5,900 U	3,700 U
N-Nitrosodiphenylamine	28	40	20 U	180 U	1,200 U	740 U
Pentachlorophenol[a]	360	690	98 U	910 U	5,900 U	3,700 U
Phenol[a]	420	1,200	20 U	180 U	**1,400**	740 U

Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			WM-ST1G	DK-ST1G	DK-ST1G	1st-ST1G	1st-ST1G	1st-ST2G	1st-ST2G	1st-ST3G	1st-ST3G	1st-ST5G	HP-ST4G	HP-ST6G	HP-ST6G	KN-ST1G	KN-ST1G
Lab Ref			NN61	NO62	OP80	NN61	OP80	NN61	OP80	NO62	OQ56	NP28	NO62	NR14	OV62	NO62	OR05
Type			Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
Outfall			SW Idaho SD	SW Idaho SD	SW Idaho SD	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	Highland Park Way S SD	Highland Park Way S SD	Highland Park Way S SD	SW Kenny SD	SW Kenny SD
Date	SQS/ LAET	CSL/ 2LAET	09/05/08	09/10/08	03/06/09	09/05/08	03/06/09	09/05/08	03/06/09	09/10/08	03/12/09	09/16/08	09/10/08	09/25/08	04/15/09	09/10/08	03/17/09
Total solids (%)			75	91.3	77.9	59.0	70	83	73.7	84.4	76.7	21.6	86.6	20.3	42.6	45.6	51.5
Total organic carbon (%)			0	3.63	3.6	8.37	5.98	1	2.14	2.02	3.82	11.2	0.708	6.64 J	6.9	4.48	5.03
Metals (mg/kg)																	
Arsenic	57	93	6 U	**10**	6 U	**7**	7 U	6 U	**7**	5 U	6 U	**30**	**7**	**30**	**30**	**30**	**34**
Copper	390	390	**17.4**	**26.3**	**18**	**110**	**89.5**	**21**	**23.6**	**29.6**	**35.6**	**246**	**36.3**	**144**	**160**	**147**	**156**
Lead	450	530	**10**	**33**	**34**	**63**	**46**	**180**	**32**	**10**	**11**	**301**	**19**	**150**	**162**	**223**	**184**
Mercury	0.41	0.59	0.06 U	**0.08**	**0.05**	0.07 U	**0.07**	0.05 U	0.05 U	0.04 U	0.06 U	**0.6**	0.04 U	**0.26**	**0.31**	**0.4**	**0.19**
Zinc	410	960	**74**	**170**	**122**	**502**	**396**	**134**	**143**	**162**	**192**	**1,480**	**184**	**876**	**882**	**707**	**771**
Total petroleum hydrocarbons (mg/kg)																	
TPH-diesel	2,000[b]		65 U	56 U	65 U	**180**	**650**	61 U	**170**	61 U	61 U	**1,100**	**89**	230 U	**790**	**130**	**870**
TPH-oil	2,000[b]		130 U	**270**	**280**	**1,000**	**3,300**	**320**	**910**	**410**	**470**	**3,800**	**540**	470 U	**3,800**	**660**	**4,600**
LPAH (ug/kg DW)																	
Acenaphthene	500	500	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	**54** J	**580**	39 U	59 U	140 U	75 U	120 U
Acenaphthylene	1,300	1,300	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Anthracene	960	960	20 U	19 U	20 U	**31** J	**91** J	20 U	59 U	20 U	**160**	430 U	39 U	59 U	140 U	75 U	**160**
Fluorene	540	540	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	**75**	**490**	39 U	59 U	140 U	75 U	120 U
Naphthalene	2,100	2,100	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Phenanthrene	1,500	1,500	**67**	19 U	20 U	**140**	**400**	**13** J	**35** J	**41**	**960**	**980**	**34** J	**190**	**160**	**85**	**310**
HPAH (ug/kg DW)																	
Benzo(a)anthracene	1,300	1,600	**69**	19 U	20 U	**130**	**250**	20 U	59 U	**42**	580	430 U	**34** J	**130**	**140**	**91**	**400**
Benzo(a)pyrene	1,600	1,600	**110**	19 U	20 U	**140**	**230**	20 U	59 U	**54**	**600**	**560**	**37** J	**150**	**190**	**150**	**620**
Benzo(b)fluoranthene	3,200	3,600	**180**	19 U	**10** J	**180**	**370**	**12** J	**31** J	**66**	**610**	**750**	**66**	**240**	**270**	**310**	**760**
Benzo(g,h,i)perylene	670	720	**120**	19 U	20 U	**90**	**120** J	20 U	59 U	**20**	**250**	430 U	39 U	**140**	140 U	**93**	**640** J
Benzo(k)fluoranthene	3,200	3,600	**310**	**21**	20 U	**220**	**250**	**14** J	59 U	**74**	**580**	**1,200**	**45**	**180**	**240**	**300**	**960** J
Chrysene	1,400	2,800	**190**	19 U	**11** J	**240**	**720**	**19** J	**54** J	**64**	**720**	**1,200**	**55**	**290**	**310**	**210**	**710**
Dibenz(a,h)anthracene	230	540	**20**	19 U	20 U	58 U	130 U	20 U	59 U	20 U	**78**	430 U	39 U	59 U	140 U	75 U	**160**
Fluoranthene	1,700	2,500	**200**	19 U	20 U	**310**	**600**	**26**	**53** J	**130**	**1,500**	**2,200**	**110**	**380**	**400**	**420**	**1,100**
Indeno(1,2,3-cd)pyrene	600	690	**120**	19 U	20 U	**53** J	**80** J	20 U	59 U	**16** J	**260**	430 U	39 U	**98**	140 U	**83**	**560** J
Pyrene	2,600	3,300	**170**	19 U	20 U	**520**	**730**	**27**	**72**	**110**	**1,300**	**2,300**	**81**	**400**	**390**	**290**	**940**
Phthalates (ug/kg DW)																	
Bis(2-ethylhexyl)phthalate	1,300	1,900	**130**	**63**	**59**	**2,400**	**8,100**	**190**	**3,200**	**160**	**180**	**44,000**	**290**	**4,500**	**5,100**	**830**	**2,100** B
Butylbenzylphthalate	63	900	**13** J	19 U	20 U	**210**	**300**	**64**	**77**	20 U	57 U	430 U	39 U	**570**	**600**	75 U	**140**
Diethylphthalate	200	200	**18** J	19 U	**19** J	58 U	130 U	20 U	59 U	**28**	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Dimethylphthalate	71	160	20 U	19 U	20 U	**97**	**120** J	20 U	59 U	20 U	57 U	430 U	39 U	**72**	140 U	75 U	120 U
Di-n-butylphthalate	1,400	1,400	20 U	19 U	**35**	**93**	130 U	20 U	59 U	20 U	57 U	**570**	39 U	**69**	140 U	**87**	**230**
Di-n-octyl phthalate	6,200	--	20 U	19 U	20 U	**83**	**1,200**	20 U	**49** J	20 U	57 U	**1,900**	**310**	**220**	**190**	75 U	120 U
PCBs (ug/kg DW)																	
Aroclor 1016			20 U	19 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	60 U	19 U	20 U	20 U	20 U	20 U
Aroclor 1221			20 U	19 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	60 U	19 U	20 U	20 U	20 U	20 U
Aroclor 1232			20 U	19 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	60 U	19 U	20 U	20 U	20 U	20 U
Aroclor 1242			20 U	19 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	60 U	19 U	20 U	20 U	20 U	20 U
Aroclor 1248			**20**	19 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	**160**	19 U	20 U	**26**	**68**	**26**
Aroclor 1254			20 U	19 U	20 U	**30**	**20**	20 U	20 U	20 U	20 U	**220**	19 U	20 U	**34**	**130**	**69**
Aroclor 1260			20 U	19 U	20 U	**31**	20 U	20 U	20 U	20 U	20 U	**120**	19 U	20 U	**23**	**100**	**72**
Total PCBs	130	1,000	20	19 U	20 U	**61**	**20**	20 U	20 U	20 U	20 U	**500**	19 U	20 U	**83**	**298**	**167**
Other organic compounds (ug/kg DW)																	
1,2,4-Trichlorobenzene			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
1,2-Dichlorobenzene			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
1,3-Dichlorobenzene			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
1,4-Dichlorobenzene	110	110	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
2,2'-Oxybis(1-chloropropane)			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
2,4,5-Trichlorophenol			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U
2,4,6-Trichlorophenol			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U
2,4-Dichlorophenol			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U

Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			7th-ST1G	7th-ST1G	7th-ST2G	7th-ST3G	7th-ST3G	96-ST1G	96-ST1G	96-ST2G	96-ST2G	96-ST3G	96-ST3G	HC-ST1G	HC-ST1G	KC2-ST1G	KC1-ST1G
Lab Ref			NO62	OR05	NP28	NM74	OQ56	OD79	OW77	OD79	OW77	OC78	OY94	OB36	OV62	NR14	OS39
Type			Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
Outfall			7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD	Hamm Creek	Hamm Creek	KCIA SD#2	KCIA SD#2
Date	SQS/ LAET	CSL/ 2LAET	09/10/08	03/17/09	09/16/08	08/28/08	03/12/09	12/11/08	04/24/09	12/11/08	04/24/09	12/03/08	05/13/09	11/21/08	04/15/09	09/25/08	03/26/09
Total solids (%)			45.8	43.1	95.1	46.7	24.6	68.5	73.9	78.7	70.1	77.5	79.7	87.7	86.8	38.8	19.1
Total organic carbon (%)			6.46	5.59	0.417	5.29	13.9	1.3	2.84	0.836	3.39	0.277	0.91	0.283	0.354	12.3	4.81
Metals (mg/kg)																	
Arsenic	57	93	**20**	**20**	6 U	**20**	**18**	**7**	**7**	6 U	7 U	6 U	6 UJ	5 U	**6**	140 U	120
Copper	390	390	**251**	**223**	**19.2**	**159**	**176**	**28.9**	**25.3**	**18.8**	**23.2**	**8.1**	**9.4** J	**12.6**	**18.7**	**16**	**18**
Lead	450	530	**188**	**189**	**3**	**173**	**190**	**38**	**36**	**31**	**63**	**5**	**6** J	**8**	**7**	50 U	50
Mercury	0.41	0.59	**0.26**	**0.20**	0.05 U	**0.26**	**0.28**	0.06 U	**0.03**	0.05 U	**0.04**	0.05 U	0.02 UJ	0.06 U	0.02 U	0.3 U	0.2
Zinc	410	960	**735**	**674**	**84**	**654**	**738**	**228**	**249**	**396**	**410**	**34**	38 UJ	**72**	**62**	**330**	**370**
Total petroleum hydrocarbons (mg/kg)																	
TPH-diesel	2,000[b]		**240**	**930**	59 U	110 U	**1,000**	**77**	**100**	33 U	62 U	64 U	61 U	57 U	58 U	**320**	250
TPH-oil	2,000[b]		**1,300**	**4,800**	120 U	**220**	**3,700**	**470**	**570**	**190**	**330**	130 U	120 U	110 U	120 U	**1,500**	500
LPAH (ug/kg DW)																	
Acenaphthene	500	500	140 U	200 U	19 U	20 U	150 U	**22**	**86**	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Acenaphthylene	1,300	1,300	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Anthracene	960	960	140 U	200 U	19 U	20 U	150 U	**54**	**280**	**32**	60 U	20 U	19 U	20 U	19 U	20 U	20
Fluorene	540	540	140 U	200 U	19 U	20 U	150 U	**25**	**120**	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Naphthalene	2,100	2,100	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Phenanthrene	1,500	1,500	**240**	**420**	19 U	**110**	**280**	**260**	**1,400**	**150**	**200**	20 U	19 U	20 U	19 U	**61**	**42**
HPAH (ug/kg DW)																	
Benzo(a)anthracene	1,300	1,600	**240**	**360**	19 U	**89**	**270**	**160**	**710**	**120**	140	20 U	19 U	20 U	19 U	**35**	**27**
Benzo(a)pyrene	1,600	1,600	**420**	**460**	19 U	**140**	**440**	**160**	**750**	**110**	**160**	20 U	19 U	20 U	19 U	**60**	**43**
Benzo(b)fluoranthene	3,200	3,600	**410**	**420**	19 U	**220**	**420**	**180**	**970**	**120**	**190**	20 U	19 U	20 U	19 U	**140**	**82**
Benzo(g,h,i)perylene	670	720	**270**	**330**	19 U	**59**	**380**	**54**	**270**	**35**	**69**	20 U	19 U	20 U	19 U	**98**	**64**
Benzo(k)fluoranthene	3,200	3,600	**770**	**640**	19 U	**190**	**610**	**140**	**730**	**100**	**220**	20 U	19 U	20 U	19 U	**85**	**84**
Chrysene	1,400	2,800	**520**	**560**	19 U	**140**	**450**	**200**	**820**	**130**	**190**	20 U	19 U	20 U	19 U	**94**	**72**
Dibenz(a,h)anthracene	230	540	140 U	200 U	19 U	20 U	150 U	20 U	**93**	19 U	60 U	20 U	19 U	20 U	19 U	**32**	**14**
Fluoranthene	1,700	2,500	**800**	**850**	19 U	**250**	**660**	**370**	**2,000**	**260**	**350**	20 U	19 U	20 U	19 U	**140**	**110**
Indeno(1,2,3-cd)pyrene	600	690	**190**	**280**	19 U	**47**	**270**	**53**	**260**	**35**	**60**	20 U	19 U	20 U	19 U	**92**	**56**
Pyrene	2,600	3,300	**1,000**	**920**	19 U	**210**	**640**	**420**	**1,800**	**260**	**350**	20 U	19 U	20 U	19 U	**120**	**84**
Phthalates (ug/kg DW)																	
Bis(2-ethylhexyl)phthalate	1,300	1,900	**3,400**	**1,500** B	19 U	**510**	**1,500**	**920**	**620**	**170**	**640**	20 U	38 U	51 U	**72**	**88**	**32**
Butylbenzylphthalate	63	900	**270**	**220**	19 U	**100**	**200**	**28**	**140**	**37**	60 U	20 U	19 U	20 U	19 U	20 U	20
Diethylphthalate	200	200	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	23 U	20 U	19 U	20 U	**16**
Dimethylphthalate	71	160	140 U	200 U	19 U	**32**	**91** J	**24**	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Di-n-butylphthalate	1,400	1,400	140 U	200 U	19 U	**44**	**120** J	20 U	59 U	19 U	60 U	20 U	**25**	20 U	19 U	20 U	20
Di-n-octyl phthalate	6,200	--	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
PCBs (ug/kg DW)																	
Aroclor 1016			270 U	20 U	20 U	20 U	20 U	20 U	19 U	19 U	19 U	20 U	20 U	20 U	19 U	20 U	20
Aroclor 1221			270 U	20 U	20 U	20 U	20 U	20 U	19 U	19 U	19 U	20 U	20 U	20 U	19 U	20 U	20
Aroclor 1232			270 U	20 U	20 U	20 U	20 U	20 U	19 U	19 U	19 U	20 U	20 U	20 U	19 U	20 U	20
Aroclor 1242			270 U	20 U	20 U	20 U	20 U	20 U	19 U	19 U	19 U	20 U	20 U	20 U	19 U	20 U	20
Aroclor 1248			270 U	20 U	20 U	20 U	20 U	20 U	19 U	19 U	19 U	20 U	20 U	20 U	19 U	**31**	20
Aroclor 1254			540 Y	**68**	20 U	**59**	**31**	**39**	19 U	19 U	19 U	20 U	20 U	20 U	19 U	**40**	20
Aroclor 1260			**2,400**	**120**	20 U	**55**	**29**	**50**	19 U	19 U	19 U	20 U	20 U	20 U	19 U	**21**	20
Total PCBs	130	1,000	**2,400**	**188**	20 U	**114**	**60**	**89**	19 U	19 U	19 U	20 U	20 U	20 U	19 U	**92**	20
Other organic compounds (ug/kg DW)																	
1,2,4-Trichlorobenzene			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
1,2-Dichlorobenzene			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
1,3-Dichlorobenzene			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
1,4-Dichlorobenzene	110	110	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
2,2'-Oxybis(1-chloropropane)			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
2,4,5-Trichlorophenol			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
2,4,6-Trichlorophenol			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
2,4-Dichlorophenol			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100

Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			KC2-ST1G	KCJ-ST1G	T2A	MHT6Ba	MH17	MH18	MH21A	MH201	MH202	MH203	MH204	MH205	MH206	MH207	MH208
Lab Ref			OS39	OS39	OB72	OI27	OB72	OB72	OQ59	OA35	OA35	OA35	OI27	OI27	OI27	OL20	OL20
Type			Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
Outfall			KCIA SD#1	KCIA-Jorgensen SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	16th Ave S SD	16th Ave S SD	16th Ave S SD	S Brighton CSO	S Brighton St SD	S Nevada SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD
Date	SQS/ LAET	CSL/ 2LAET	03/26/09	03/26/09	11/25/08	01/15/09	11/25/08	11/25/08	03/12/09	11/17/08	11/17/08	11/17/08	01/15/09	01/15/09	01/15/09	02/04/09	02/04/09
Total solids (%)			84.8	84.2	53.2	49.9	78	54.8	43.7	72	65.7	65.3	61.9	73.2	67	NA	NA
Total organic carbon (%)			0.999	1.88	5.27	9.45	2.4	3.43	5.68	5.82	9.79	7.81	6.58	3.56	2.72	NA	NA
Metals (mg/kg)																	
Arsenic	57	93 UJ	**10** J	**21** J	**10**	**10**	6 U	**34**	**10**	**10**	**9.2**	8 U	**8**	**125**	**9**	**12**	**8**
Copper	390	390 J	**23** J	**116** J	**158**	**148**	**109**	**387**	**176**	**158**	**158**	**111**	**200**	**209**	**98.6**	**254**	**110**
Lead	450	530 UJ	**26** J	**134** J	**83**	**179**	**51**	**461**	**110**	**281**	**260**	**116**	**361**	**121**	**301**	**197**	**193**
Mercury	0.41	0.59 UJ	0.05 UJ	**0.07** J	**0.15**	**0.24**	**0.06**	**0.48**	**0.30**	**7.7**	**0.12**	**0.11**	**1.19**	**0.15**	**0.35**	**0.40**	**0.76**
Zinc	410	960 J	**1,170** J	**357** J	**337**	**858**	**183**	**534**	**448**	**1,020**	**1,640**	**562**	**586**	**710**	**489**	**259**	**196**
Total petroleum hydrocarbons (mg/kg)																	
TPH-diesel	2,000[b]	U	**74**	**260**	**390**	**1,200**	**97**	**800**	**880**	**220**	**330**	**780**	**410**	**220**	**120**	NA	NA
TPH-oil	2,000[b]	U	**370**	**1,500**	**1,900**	**6,800**	**560**	**2,300**	**4,500**	**1,400**	**1,600**	**3,900**	**2,000**	**920**	**630**	NA	NA
LPAH (ug/kg DW)																	
Acenaphthene	500	500 U	55 U	**94**	34 U	79 U	**13** J	**54**	140 U	100 U	120 U	170 U	**39** J	**66**	**100**	NA	NA
Acenaphthylene	1,300	1,300 U	55 U	58 U	34 U	**41** J	19 U	32 U	140 U	100 U	120 U	170 U	**27** J	39 U	**20** J	NA	NA
Anthracene	960	960 U	55 U	**320**	34 U	**110**	**18** J	**290**	140 U	100 U	120 U	170 U	**290**	**180**	**180**	NA	NA
Fluorene	540	540 U	55 U	**140**	34 U	79 U	19 U	**53**	140 U	100 U	120 U	170 U	**54**	**70**	**120**	NA	NA
Naphthalene	2,100	2,100 U	55 U	58 U	34 U	**55** J	19 U	**27** J	140 U	100 U	120 U	170 U	**25** J	39 U	**66**	NA	NA
Phenanthrene	1,500	1,500	**200**	**2,000**	**77**	**330**	**100**	**520**	**120** J	**350**	**470**	**640**	**540**	**440**	**1,300**	NA	NA
HPAH (ug/kg DW)																	
Benzo(a)anthracene	1,300	1,600	**180**	**1,400**	**52**	**310**	**73**	**840**	**130** J	**320**	**300**	**500**	**410**	**260**	**500**	NA	NA
Benzo(a)pyrene	1,600	1,600	**200**	**1,400**	**86**	**640**	**77**	**860**	**160**	**390**	**360**	**560**	**680**	**330**	**650**	NA	NA
Benzo(b)fluoranthene	3,200	3,600	**290**	**1,500**	**94**	**1,000**	**87**	**950**	**190**	**330**	**430**	**650**	**920**	**440**	**700**	NA	NA
Benzo(g,h,i)perylene	670	720	**120** J	**640**	**77**	**450**	**37**	**270**	**210**	**290**	**240**	**350**	**440**	**180**	**270**	NA	NA
Benzo(k)fluoranthene	3,200	3,600	**290**	**1,500**	**130**	**550**	**82**	**820**	**240**	**480**	**410**	**760**	**570**	**310**	**590**	NA	NA
Chrysene	1,400	2,800	**280**	**1,700**	**160**	**570**	**110**	**880**	**310**	**450**	**510**	**770**	**570**	**390**	**600**	NA	NA
Dibenz(a,h)anthracene	230	540 J	160 U	**300**	34 U	**62** J	19 U	**100**	140 U	100 U	120 U	170 U	**88** J	**25** J	**60** J	NA	NA
Fluoranthene	1,700	2,500	**560**	**3,500**	**190**	**800**	**200**	**1,800**	**390**	**810**	**800**	**1,500**	**1,100**	**780**	**1,800**	NA	NA
Indeno(1,2,3-cd)pyrene	600	690	**120** J	**700**	**45**	**320**	**29**	**280**	**100** J	**210**	**170**	**260**	**400**	**170**	**280**	NA	NA
Pyrene	2,600	3,300	**490**	**2,800**	**200**	**1,100**	**170**	**1,500**	**510**	**650**	**700**	**1,300**	**950**	**790**	**1,300**	NA	NA
Phthalates (ug/kg DW)																	
Bis(2-ethylhexyl)phthalate	1,300	1,900	**360**	**590**	**6,500**	**5,300**	**670**	**3,200**	**5,100**	**13,000**	**44,000**	**8,300**	**2,200**	**2,300**	**1,300**	NA	NA
Butylbenzylphthalate	63	900 U	55 U	58 U	**95**	**310**	**100**	32 U	**240**	**480**	**370**	**2,600**	**400**	**110**	**84**	NA	NA
Diethylphthalate	200	200 J	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
Dimethylphthalate	71	160 U	55 U	58 U	**26** J	**50** J	**47**	**45**	140 U	**120**	**130**	170 U	**79**	39 U	39 U	NA	NA
Di-n-butylphthalate	1,400	1,400 U	55 U	**66**	34 U	**98**	19 U	**31** J	**1,400**	100 U	**240**	**1,000**	**160**	**36** J	**60**	NA	NA
Di-n-octyl phthalate	6,200	-- U	55 U	58 U	**91**	320	**28**	32 U	**190**	**250**	**3,900**	**660**	**130**	**200**	39 U	NA	NA
PCBs (ug/kg DW)																	
Aroclor 1016		U	20 U	2,500 U	20 U	18 U	20 U	60 U	20 U	20 U	19 U	20 U	400 U	18 U	18 U	NA	NA
Aroclor 1221		U	20 U	2,500 U	20 U	18 U	20 U	60 U	20 U	20 U	19 U	20 U	400 U	18 U	18 U	NA	NA
Aroclor 1232		U	20 U	2,500 U	20 U	18 U	20 U	60 U	20 U	20 U	19 U	20 U	400 U	18 U	18 U	NA	NA
Aroclor 1242		U	20 U	2,500 U	20 U	18 U	20 U	60 U	20 U	20 U	19 U	20 U	400 U	18 U	18 U	NA	NA
Aroclor 1248		U	20 U	2,500 U	20 U	**320**	20 U	**150**	44 Y	20 U	**75**	**41**	400 U	**30**	**25**	NA	NA
Aroclor 1254		U	98 Y	**8,000**	**34**	**360**	20 U	**200**	**53**	**71**	**100**	**82**	400 U	**61**	**97**	NA	NA
Aroclor 1260		U	20 U	2,500 U	20 U	**220**	20 U	**110**	49 Y	**170**	**120**	**59**	**620**	**57**	**79**	NA	NA
Total PCBs	130	1,000 U	98 Y	**8,000**	**34**	**900**	20 U	**460**	**53**	**241**	**295**	**182**	**620**	**148**	**201**	NA	NA
Other organic compounds (ug/kg DW)																	
1,2,4-Trichlorobenzene		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
1,2-Dichlorobenzene		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	33 J	39 U	NA	NA
1,3-Dichlorobenzene		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
1,4-Dichlorobenzene	110	110 U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	29 J	39 U	NA	NA
2,2'-Oxybis(1-chloropropane)		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
2,4,5-Trichlorophenol		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
2,4,6-Trichlorophenol		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
2,4-Dichlorophenol		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA

Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			MH209	MH210	MH211	MH212	MH213	MH214	MH215	MH216	MH217	MH218	MH219	MH220	MH221	MH222	MH223
Lab Ref			OL20	OL20	OQ56	OS39	OW77	OW77	OY94	OZ57	OZ57	OZ57	OZ57	OZ76	OZ76	OZ99	OZ99
Type			Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
Outfall			Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	S River SD	16th Ave S SD	16th Ave S SD	16th Ave S SD	WSDOT SD-S Ryan St	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	S River St SD	S River St SD	S Brighton SD	S Brighton SD
Date	SQS/ LAET	CSL/ 2LAET	02/04/09	02/04/09	03/12/09	03/26/09	04/24/09	04/24/09	05/13/09	05/19/09	05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/21/09	05/21/09
Total solids (%)			NA	87.2	60	79.9	61.1	57	64.9	83.5	82.2	54.4	58.1	58.2	68.1	84	84.2
Total organic carbon (%)			NA	0.703	7.04	2.37	7.73	8.51	3.57	1.4	1.84	1.81	1.72	7.3	4.42	0.424	0.897
Metals (mg/kg)																	
Arsenic	57	93	**15**	5 U	**96**	6 UJ	**9**	**9**	**10** J	**12** J	**13** J	**24** J	**23** J	**51** J	**19** J	**46** J	**1,420**
Copper	390	390	**185**	**28.1**	**470**	**76** J	**145**	**146**	**87.6** J	**39.1** J	**55.6** J	**62.2** J	**63.1** J	**251** J	**133** J	**85.7** J	**831**
Lead	450	530	**333**	**12**	**408**	**64** J	**169**	**195**	**357** J	**20** J	**31** J	**130** J	**111** J	**245** J	**225** J	**90** J	**977**
Mercury	0.41	0.59	**0.13**	**0.09**	**0.30**	**0.05** J	**0.15**	**0.16**	**0.07** J	0.03 UJ	**0.02** J	**0.15** J	**0.10** J	**0.20** J	**0.16** J	**0.06** J	**0.13**
Zinc	410	960	**302**	**97**	**1,010**	**219** J	**573**	**611**	**315** J	**102** J	**164** J	**601** J	**636** J	**790** J	**552** J	**247** J	**4,000**
Total petroleum hydrocarbons (mg/kg)																	
TPH-diesel	2,000[b]		NA	**68**	**5,100**	**340**	**780**	**320**	**3,200**	**150**	**160**	**1,500**	**1,600**	**1,100**	**940**	**98**	**370**
TPH-oil	2,000[b]		NA	**380**	**9,300**	**2,200**	**4,000**	**1,700**	**7,800**	**950**	**950**	**3,600**	**3,500**	**2,800**	**2,500**	**200**	**760**
LPAH (ug/kg DW)																	
Acenaphthene	500	500	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	**250**	**330**	120 U	120 U	**63**	**87**
Acenaphthylene	1,300	1,300	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
Anthracene	960	960	NA	20 U	**180**	100 U	68 U	65 U	**44** J	58 U	140 U	**430**	**350**	**94** J	120 U	**1,400**	**290**
Fluorene	540	540	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	**310**	**340**	120 U	120 U	**120**	**75**
Naphthalene	2,100	2,100	NA	20 U	160 U	100 U	68 U	**110**	61 U	58 U	140 U	220 U	260 U	120 U	120 U	**25**	58
Phenanthrene	1,500	1,500	NA	**80**	**580**	**190**	**240**	**310**	**140**	**39** J	140 U	**1,900**	**1,800**	**370**	**180**	**300**	**320**
HPAH (ug/kg DW)																	
Benzo(a)anthracene	1,300	1,600	NA	**41**	**810**	**100** J	**190**	**140**	**140**	**32** J	140 U	**1,200**	**1,000**	**440**	**210**	**120**	**180**
Benzo(a)pyrene	1,600	1,600	NA	**46**	**1,100**	**100**	**350**	**370**	**120** J	58 U	140 U	**1,200**	**970**	**570**	**340**	**73**	**140**
Benzo(b)fluoranthene	3,200	3,600	NA	**55**	**970**	**120**	**470**	**380**	**210**	**28** J	140 U	**1,300**	**1,300**	**510**	**360**	**70**	**140**
Benzo(g,h,i)perylene	670	720	NA	**22**	**580**	**110**	**330**	**300**	**170**	58 U	140 U	**250**	**220** J	**430**	**240**	**19** J	**34**
Benzo(k)fluoranthene	3,200	3,600	NA	**48**	**1,300**	**170**	**510**	**480**	**210**	**28** J	140 U	**1,300**	**1,100**	**510**	**360**	**72**	**180**
Chrysene	1,400	2,800	NA	**57**	**1,300**	**220**	**490**	**530**	**350** J	**61**	140 U	**1,400**	**1,300**	**640**	**460**	**160**	**300**
Dibenz(a,h)anthracene	230	540	NA	20 U	**87** J	100 U	68 U	**73** J	61 U	58 U	140 U	220 U	260 U	**61** J	120 U	20 U	58
Fluoranthene	1,700	2,500	NA	**150**	**2,000**	**310**	**540**	**580**	**570**	**74**	140 U	**3,300**	**3,100**	**1,000**	**460**	**590**	**880**
Indeno(1,2,3-cd)pyrene	600	690	NA	**23**	**520**	**58** J	**240** J	**200** J	**99**	58 U	140 U	**300**	**250** J	**320**	**160**	**19** J	**36**
Pyrene	2,600	3,300	NA	**110**	**2,300**	**350**	**910**	**850**	**380** J	**72**	140 U	**2,200**	**2,000**	**920**	**530**	**360**	**630**
Phthalates (ug/kg DW)																	
Bis(2-ethylhexyl)phthalate	1,300	1,900	NA	**300**	**5,800**	**3,800**	**1,800**	**1,800**	**5,600** B	**460**	**580**	**12,000**	**16,000**	**1,600**	**2,200**	**160**	**820**
Butylbenzylphthalate	63	900	NA	**120**	160 U	**790**	**240**	**150**	**380**	**71**	**270**	220 U	**320**	**1,300**	**140**	20 U	58
Diethylphthalate	200	200	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
Dimethylphthalate	71	160	NA	**680**	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	**76** J	20 U	58
Di-n-butylphthalate	1,400	1,400	NA	20 U	160 U	100 U	**72**	65 U	61 U	58 U	140 U	220 U	260 U	**78** J	**130**	20 U	58
Di-n-octyl phthalate	6,200	--	NA	20 U	160 U	**390**	68 U	65 U	61 U	**30** J	140 U	**410**	**480**	120 U	120 U	**42**	**580**
PCBs (ug/kg DW)																	
Aroclor 1016			NA	19 U	20 U	20 U	98 U	59 U	20 U	20 U	20 U	160 U	170 U	18 U	17 U	20 U	20
Aroclor 1221			NA	19 U	20 U	20 U	98 U	59 U	20 U	20 U	20 U	160 U	170 U	18 U	17 U	20 U	20
Aroclor 1232			NA	19 U	20 U	20 U	98 U	59 U	20 U	20 U	20 U	160 U	170 U	18 U	17 U	20 U	20
Aroclor 1242			NA	19 U	20 U	20 U	98 U	59 U	20 U	20 U	20 U	160 U	170 U	18 U	17 U	20 U	20
Aroclor 1248			NA	19 U	20 U	**27**	98 U	59 U	**73**	20 U	20 U	**190**	**220**	**20**	**23**	20 U	20
Aroclor 1254			NA	**46**	**57**	**64**	98 U	59 U	**94**	20 U	20 U	**530**	**610**	**160** J	**78**	20 U	**40**
Aroclor 1260			NA	19 U	**51**	**45**	**300**	**300**	**65**	20 U	20 U	160 U	170 U	**190**	**100**	**28**	**39**
Total PCBs	130	1,000	NA	**46**	**108**	**136**	**300**	**300**	**232**	20 U	20 U	**720**	**830**	**370** J	**201**	**28**	**79**
Other organic compounds (ug/kg DW)																	
1,2,4-Trichlorobenzene			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
1,2-Dichlorobenzene			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
1,3-Dichlorobenzene			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
1,4-Dichlorobenzene	110	110	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
2,2'-Oxybis(1-chloropropane)			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
2,4,5-Trichlorophenol			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
2,4,6-Trichlorophenol			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
2,4-Dichlorophenol			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290

Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			MH224	MH225	MH226	MH227	MH228	MH229	MH230	MH231	MH232	MH233	MH234	MH235	MH236	MH237
Lab Ref			OZ99	OZ99	PA21	PA21	PA21	PA21	PA42	PA42	PA42	PA42	PA42	PA42	PA57	PB04
Type			Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
Outfall			S Brighton SD	S Brighton SD	S Brighton SD	S Brighton SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	S River St SD	Diagonal Ave S CSO/SD	SW Idaho SD
Date	SQS/ LAET	CSL/ 2LAET	05/21/09	05/21/09	05/26/09	05/26/09	05/26/09	05/26/09	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/28/09	06/02/09
Total solids (%)			46.5	43.2	69.9	81.3	50.6	55.6	71.4	65.6	84.6	63	88.2	60.8	70	80.4
Total organic carbon (%)			6.75	5.5	5.29	0.726	5.65	3.82	3.2	5.26	0.534	3.52	1.15	7.06	3.35	3.09
Metals (mg/kg)																
Arsenic	57	93 J	**30** J	**40** J	**58** J	**1,270** J	**20** J	**20** J	**13** J	**50** J	**9** J	**30** J	**10** J	**110** J	**32** J	30 UJ
Copper	390	390 J	**227** J	**335** J	**273** J	**848** J	**135** J	**137** J	**59.4** J	**387** J	**34.9** J	**233** J	**28** J	**442** J	**328** J	**109** J
Lead	450	530 J	**222** J	**473** J	**757** J	**957** J	**121** J	**124** J	**30** J	**374** J	**19** J	**576** J	**9** J	**432** J	**369** J	**70** J
Mercury	0.41	0.59 J	**0.46** J	**1.15** J	**3.41** J	**0.24** J	**0.22** J	**0.19** J	0.03 UJ	**0.10** J	0.03 UJ	**1.34** J	0.02 UJ	**0.36** J	**0.11** J	**0.05** J
Zinc	410	960 J	**959** J	**709** J	**905** J	**3,600** J	**477** J	**426** J	**147** J	**650** J	**130** J	**682** J	**112** J	**1,170** J	**487** J	**222** J
Total petroleum hydrocarbons (mg/kg)																
TPH-diesel	2,000[b]		**570**	**21,000**	**1,100**	**360**	**680**	**350**	**380**	**660**	58 U	**330**	**60**	**2,100**	**670**	**520**
TPH-oil	2,000[b]		**1,400**	**30,000**	**4,900**	**910**	**2,600**	**1,300**	**2,100**	**3,300**	**390**	**1,300**	**370**	**4,900**	**3,100**	**380**
LPAH (ug/kg DW)																
Acenaphthene	500	500	58 U	170 U	190 U	**120**	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Acenaphthylene	1,300	1,300 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Anthracene	960	960	**33** J	170 U	**170** J	**570**	380 U	340 U	130 U	**100** J	44 U	170 U	40 U	**160** J	240 U	58 U
Fluorene	540	540	58 U	170 U	190 U	**110**	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Naphthalene	2,100	2,100 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	**110**	170 U	40 U	180 U	240 U	58 U
Phenanthrene	1,500	1,500	**180**	170 U	**1,200**	**620**	**210** J	340 U	130 U	**430**	**44**	**260**	**61**	**590**	**300**	**34** J
HPAH (ug/kg DW)																
Benzo(a)anthracene	1,300	1,600	**130**	**160** J	**960**	**460**	**250** J	**220** J	130 U	**460**	**27** J	**260**	**44**	**720**	**310**	**40** J
Benzo(a)pyrene	1,600	1,600	**130**	**220**	**1,200**	**370**	**380**	**320** J	**76** J	**550**	**24** J	**370**	**44**	**1,000**	**300**	**51** J
Benzo(b)fluoranthene	3,200	3,600	**180**	**320**	**1,000**	**340**	**420**	**360**	**70** J	**600**	**45**	**510**	**51**	**1,300**	**440**	**55** J
Benzo(g,h,i)perylene	670	720 J	**65**	**160** J	**860**	**150**	**340** J	**280** J	**70** J	**340**	44 U	**350**	40 U	**610**	**160** J	**110** J
Benzo(k)fluoranthene	3,200	3,600	**180**	**190**	**1,100**	**370**	**420**	**360**	**70** J	**600**	**39** J	**350**	**40**	**890**	**490**	**55** J
Chrysene	1,400	2,800	**200**	**540**	**1,500**	**630**	**530**	**430**	**130**	**970**	**55**	**430**	**66**	**1,400**	**590**	**76** J
Dibenz(a,h)anthracene	230	540 U	58 U	170 U	**130** J	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	**110** J	240 U	58 U
Fluoranthene	1,700	2,500	**350**	**430**	**2,200**	**1,800**	**650**	**560**	**100** J	**1,400**	**89**	**640**	**120**	**2,800**	**850**	**94** J
Indeno(1,2,3-cd)pyrene	600	690 J	**50** J	**100** J	**620**	**140**	**240** J	**190** J	130 U	**220**	44 U	**220**	40 U	**460**	240 U	**46** J
Pyrene	2,600	3,300	**290**	**1,700**	**1,700**	**1,200**	**600**	**520**	**100** J	**1,100**	**71**	**530**	**95**	**2,200**	**1,000**	**68** J
Phthalates (ug/kg DW)																
Bis(2-ethylhexyl)phthalate	1,300	1,900	**1,100**	**5,000**	**1,300**	**1,100**	**4,900**	**4,000**	**630**	**6,200**	**530**	**920**	**300**	**5,100**	**6,700**	**170** J
Butylbenzylphthalate	63	900 U	**220**	170 U	**340**	68 U	380 U	**440**	130 U	**150** J	44 U	**230**	40 U	**600**	240 U	**47** J
Diethylphthalate	200	200 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Dimethylphthalate	71	160 U	**35** J	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Di-n-butylphthalate	1,400	1,400 U	**49** J	170 U	**130** J	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Di-n-octyl phthalate	6,200	--	**41** J	130 J	190 U	**550**	**310** J	340 U	**80** J	**280**	**100**	170 U	40 U	180 U	240 U	58 U
PCBs (ug/kg DW)																
Aroclor 1016		U	20 U	20 U	97 U	19 U	98 U	98 U	100 U	98 U	96 U	99 U	19 U	97 U	97 U	20 U
Aroclor 1221		U	20 U	20 U	97 U	19 U	98 U	98 U	100 U	98 U	96 U	99 U	19 U	97 U	97 U	20 U
Aroclor 1232		U	20 U	20 U	97 U	19 U	98 U	98 U	100 U	98 U	96 U	99 U	19 U	97 U	97 U	20 U
Aroclor 1242		U	20 U	20 U	97 U	19 U	98 U	98 U	100 U	98 U	96 U	99 U	19 U	97 U	97 U	20 U
Aroclor 1248		U	20 U	99 Y	97 U	**20**	98 U	98 U	100 U	98 U	96 U	99 U	19 U	97 U	97 U	20 U
Aroclor 1254			**34**	**370**	97 U	**34**	**140**	**150**	100 U	**110**	210 Y	**190**	19 U	**200** J	**130**	20 U
Aroclor 1260			**39** J	**410**	**350**	**47** J	**310**	**290**	**110**	**190**	**620**	**150**	19 U	**250**	**140**	20 U
Total PCBs	130	1,000	**73** J	**780**	**350**	**101** J	**450**	**440**	**110**	**300**	**620**	**340**	19 U	**450** J	**270**	20 U
Other organic compounds (ug/kg DW)																
1,2,4-Trichlorobenzene		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
1,2-Dichlorobenzene		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
1,3-Dichlorobenzene		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
1,4-Dichlorobenzene	110	110 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
2,2'-Oxybis(1-chloropropane)		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
2,4,5-Trichlorophenol		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
2,4,6-Trichlorophenol		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
2,4-Dichlorophenol		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U

Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			MH238	MH239	MH240	CB208
Lab Ref			PB04	PB20	PB20	PB20
Type			Inline	Inline	Inline	Inline
Outfall			SW Idaho SD	S 96th St SD	S Garden St SD	KCIA SD#2
Date	SQS/ LAET	CSL/ 2LAET	06/02/09	06/03/09	06/03/09	06/03/09
Total solids (%)			81.2	40.1	42.9	80.7
Total organic carbon (%)			2.92	6.74	18.7	0.562
Metals (mg/kg)						
Arsenic	57	93	30 UJ	**10** J	**40** J	**8** J
Copper	390	390	**109** J	**297** J	**2,200** J	**11.5** J
Lead	450	530	**50** J	**150** J	**1,710** J	**5** J
Mercury	0.41	0.59	**0.06** J	**0.10** J	**4.29** J	0.02 UJ
Zinc	410	960	**243** J	**2,530** J	**8,960** J	**32** J
Total petroleum hydrocarbons (mg/kg)						
TPH-diesel	2,000[b]		61 U	**830**	**17,000**	60 U
TPH-oil	2,000[b]		**340**	**2,400**	**60,000**	120 U
LPAH (ug/kg DW)						
Acenaphthene	500	500	58 U	290 U	**1,800** J	20 U
Acenaphthylene	1,300	1,300	58 U	290 U	2,700 U	20 U
Anthracene	960	960	58 U	290 U	**3,200**	**11** J
Fluorene	540	540	58 U	290 U	**4,600**	20 U
Naphthalene	2,100	2,100	58 U	290 U	**4,100**	20 U
Phenanthrene	1,500	1,500	**36** J	**650**	**16,000**	**95**
HPAH (ug/kg DW)						
Benzo(a)anthracene	1,300	1,600	**39** J	**480**	**5,100**	**88**
Benzo(a)pyrene	1,600	1,600	**56** J	**620**	**4,000**	**89**
Benzo(b)fluoranthene	3,200	3,600	**81** J	**980**	**4,100**	**160**
Benzo(g,h,i)perylene	670	720	**94** J	**380**	2,700 U	**27**
Benzo(k)fluoranthene	3,200	3,600	**42** J	**980**	**4,100**	**130**
Chrysene	1,400	2,800	**70** J	**1,200**	**7,300**	**120**
Dibenz(a,h)anthracene	230	540	58 U	290 U	2,700 U	20 U
Fluoranthene	1,700	2,500	**97** J	**1,600**	**16,000**	**300**
Indeno(1,2,3-cd)pyrene	600	690	**48** J	**300**	2,700 U	**31**
Pyrene	2,600	3,300	**61** J	**1,200**	**15,000**	**180**
Phthalates (ug/kg DW)						
Bis(2-ethylhexyl)phthalate	1,300	1,900	**120** J	**20,000**	**210,000**	**34**
Butylbenzylphthalate	63	900	**36** J	**1,200**	**12,000**	20 U
Diethylphthalate	200	200	58 U	290 U	2,700 U	**20** B
Dimethylphthalate	71	160	58 U	290 U	**4,200**	20 U
Di-n-butylphthalate	1,400	1,400	58 U	**210** J	**2,600** J	20 U
Di-n-octyl phthalate	6,200	--	58 U	**5,700**	**23,000**	20 U
PCBs (ug/kg DW)						
Aroclor 1016			19 U	39 U	420 U	20 U
Aroclor 1221			19 U	39 U	420 U	20 U
Aroclor 1232			19 U	39 U	420 U	20 U
Aroclor 1242			19 U	39 U	**17,000**	20 U
Aroclor 1248			19 U	39 U	420 U	20 U
Aroclor 1254			19 U	**53**	**6,400**	20 U
Aroclor 1260			19 U	**120**	**1,600** J	20 U
Total PCBs	130	1,000	19 U	**173**	**25,000** J	20 U
Other organic compounds (ug/kg DW)						
1,2,4-Trichlorobenzene			58 U	290 U	2,700 U	20 U
1,2-Dichlorobenzene			58 U	290 U	2,700 U	20 U
1,3-Dichlorobenzene			58 U	290 U	2,700 U	20 U
1,4-Dichlorobenzene	110	110	58 U	290 U	2,700 U	20 U
2,2'-Oxybis(1-chloropropane)			58 U	290 U	2,700 U	20 U
2,4,5-Trichlorophenol			290 U	1,400 U	13,000 U	98 U
2,4,6-Trichlorophenol			290 U	1,400 U	13,000 U	98 U
2,4-Dichlorophenol			290 U	1,400 U	13,000 U	98 U

Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			WM-ST1G	DK-ST1G	DK-ST1G	1st-ST1G	1st-ST1G	1st-ST2G	1st-ST2G	1st-ST3G	1st-ST3G	1st-ST5G	HP-ST4G	HP-ST6G	HP-ST6G	KN-ST1G	KN-ST1G
Lab Ref			NN61	NO62	OP80	NN61	OP80	NN61	OP80	NO62	OQ56	NP28	NO62	NR14	OV62	NO62	OR05
Type			Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
Outfall			SW Idaho SD	SW Idaho SD	SW Idaho SD	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	Highland Park Way S SD	Highland Park Way S SD	Highland Park Way S SD	SW Kenny SD	SW Kenny SD
Date	SQS/ LAET	CSL/ 2LAET	09/05/08	09/10/08	03/06/09	09/05/08	03/06/09	09/05/08	03/06/09	09/10/08	03/12/09	09/16/08	09/10/08	09/25/08	04/15/09	09/10/08	03/17/09
2,4-Dimethylphenol[a]	29	29	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
2,4-Dinitrophenol			200 U	190 U	200 U	580 U	1,300 U	200 U	590 U	200 U	570 U	4,300 U	390 U	590 U	1,400 U	750 U	1,200 U
2,4-Dinitrotoluene			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U
2,6-Dinitrotoluene			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U
2-Chloronaphthalene			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
2-Chlorophenol			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
2-Methylnaphthalene			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
2-Methylphenol[a]	63	63	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
2-Nitroaniline			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U
2-Nitrophenol			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U
3,3'-Dichlorobenzidine			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 R
3-Nitroaniline			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 R
4,6-Dinitro-2-methylphenol			200 U	190 U	200 U	580 U	1,300 U	200 U	590 U	200 U	570 U	4,300 U	390 U	590 U	1,400 U	750 U	1,200 U
4-Bromophenyl-phenylether			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
4-Chloro-3-methylphenol			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U
4-Chloroaniline			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 R
4-Chlorophenyl-phenylether			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
4-Methylphenol[a]	670	670	20 U	19 U	20 U	58 U	130 U	20 U	**70**	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
4-Nitroaniline			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 R
4-Nitrophenol			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U
Benzoic acid[a]	650	650	200 U	190 U	200 U	580 U	1,300 U	200 U	590 U	200 U	570 U	4,300 U	390 U	590 U	1,400 U	750 U	1,200 U
Benzyl alcohol[a]	57	73	20 U	19 U	**18** J	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	**430**	140 U	75 U	120 U
bis(2-Chloroethoxy) methane			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Bis-(2-chloroethyl) ether			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Carbazole			**16** J	19 U	20 U	58 U	**65** J	20 U	59 U	20 U	**120**	430 U	39 U	59 U	140 U	75 U	120 U
Dibenzofuran	540	540	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Hexachlorobenzene	22	70	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Hexachlorobutadiene	11	120	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Hexachlorocyclopentadiene			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 UJ
Hexachloroethane			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Isophorone			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Nitrobenzene			20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
N-Nitroso-di-n-propylamine			98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U
N-Nitrosodiphenylamine	28	40	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	59 U	140 U	75 U	120 U
Pentachlorophenol[a]	360	690	98 U	96 U	98 U	290 U	640 U	98 U	290 U	99 U	290 U	2,200 U	200 U	300 U	680 U	370 U	610 U
Phenol[a]	420	1,200	20 U	19 U	20 U	58 U	130 U	20 U	59 U	20 U	57 U	430 U	39 U	**72**	140 U	75 U	120 U

Concentration exceeds SQS/LAET

Concentration exceeds CSL/2LAET

Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			7th-ST1G	7th-ST1G	7th-ST2G	7th-ST3G	7th-ST3G	96-ST1G	96-ST1G	96-ST2G	96-ST2G	96-ST3G	96-ST3G	HC-ST1G	HC-ST1G	KC2-ST1G	KC1-ST1G
Lab Ref			NO62	OR05	NP28	NM74	OQ56	OD79	OW77	OD79	OW77	OC78	OY94	OB36	OV62	NR14	OS39
Type			Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
Outfall			7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD	Hamm Creek	Hamm Creek	KCIA SD#2	KCIA SD#2
Date	SQS/ LAET	CSL/ 2LAET	09/10/08	03/17/09	09/16/08	08/28/08	03/12/09	12/11/08	04/24/09	12/11/08	04/24/09	12/03/08	05/13/09	11/21/08	04/15/09	09/25/08	03/26/09
2,4-Dimethylphenol[a]	29	29	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
2,4-Dinitrophenol			1,400 U	2,000 U	190 U	200 U	1,500 U	200 U	590 U	190 U	600 U	200 U	190 U	200 U	190 U	200 U	200
2,4-Dinitrotoluene			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
2,6-Dinitrotoluene			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
2-Chloronaphthalene			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
2-Chlorophenol			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
2-Methylnaphthalene			140 U	200 U	19 U	20 U	150 U	**38**	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
2-Methylphenol[a]	63	63	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
2-Nitroaniline			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
2-Nitrophenol			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
3,3'-Dichlorobenzidine			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
3-Nitroaniline			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
4,6-Dinitro-2-methylphenol			1,400 U	2,000 U	190 U	200 U	1,500 U	200 U	590 U	190 U	600 U	200 U	190 U	200 U	190 U	200 U	200
4-Bromophenyl-phenylether			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
4-Chloro-3-methylphenol			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
4-Chloroaniline			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
4-Chlorophenyl-phenylether			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
4-Methylphenol[a]	670	670	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
4-Nitroaniline			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
4-Nitrophenol			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
Benzoic acid[a]	650	650	1,400 U	2,000 U	190 U	200 U	1,500 U	200 U	590 U	190 U	600 U	200 U	190 U	200 U	190 U	200 U	200
Benzyl alcohol[a]	57	73	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	**94**	20 U	19 U	20 U	19 U	20 U	20
bis(2-Chloroethoxy) methane			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Bis-(2-chloroethyl) ether			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Carbazole			140 U	200 U	19 U	20 U	150 U	**34**	**190**	**21**	60 U	20 U	19 U	20 U	19 U	20 U	**11**
Dibenzofuran	540	540	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Hexachlorobenzene	22	70	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Hexachlorobutadiene	11	120	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Hexachlorocyclopentadiene			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
Hexachloroethane			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Isophorone			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Nitrobenzene			140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
N-Nitroso-di-n-propylamine			700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
N-Nitrosodiphenylamine	28	40	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20
Pentachlorophenol[a]	360	690	700 U	990 U	96 U	98 U	760 U	98 U	300 U	96 U	300 U	98 U	96 U	98 U	96 U	99 U	100
Phenol[a]	420	1,200	140 U	200 U	19 U	20 U	150 U	20 U	59 U	19 U	60 U	20 U	19 U	20 U	19 U	20 U	20

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Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			KC2-ST1G	KCJ-ST1G	T2A	MHT6Ba	MH17	MH18	MH21A	MH201	MH202	MH203	MH204	MH205	MH206	MH207	MH208
Lab Ref			OS39	OS39	OB72	OI27	OB72	OB72	OQ59	OA35	OA35	OA35	OI27	OI27	OI27	OL20	OL20
Type			Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
Outfall			KCIA SD#1	KCIA-Jorgensen SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	16th Ave S SD	16th Ave S SD	16th Ave S SD	S Brighton CSO	S Brighton St SD	S Nevada SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD
Date	SQS/ LAET	CSL/ 2LAET	03/26/09	03/26/09	11/25/08	01/15/09	11/25/08	11/25/08	03/12/09	11/17/08	11/17/08	11/17/08	01/15/09	01/15/09	01/15/09	02/04/09	02/04/09
2,4-Dimethylphenol[a]	29	29	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
2,4-Dinitrophenol		U	550 U	580 U	340 U	790 U	190 U	320 U	1,400 U	1,000 U	1,200 U	1,700 U	400 U	390 U	390 U	NA	NA
2,4-Dinitrotoluene		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
2,6-Dinitrotoluene		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
2-Chloronaphthalene		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
2-Chlorophenol		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
2-Methylnaphthalene		U	55 U	58 U	34 U	**58** J	19 U	40	140 U	100 U	120 U	170 U	**28** J	**20** J	**55**	NA	NA
2-Methylphenol[a]	63	63	55 U	58 U	34 U	79 U	19 U	32 U	140 U	**720**	**5,700**	170 U	40 U	39 U	39 U	NA	NA
2-Nitroaniline		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
2-Nitrophenol		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
3,3'-Dichlorobenzidine		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
3-Nitroaniline		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
4,6-Dinitro-2-methylphenol		U	550 U	580 U	340 U	790 U	190 U	320 U	1,400 U	1,000 U	1,200 U	1,700 U	400 U	390 U	390 U	NA	NA
4-Bromophenyl-phenylether		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
4-Chloro-3-methylphenol		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
4-Chloroaniline		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
4-Chlorophenyl-phenylether		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
4-Methylphenol[a]	670	670	55 U	58 U	34 U	79 U	19 U	**79**	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
4-Nitroaniline		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
4-Nitrophenol		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
Benzoic acid[a]	650	650	550 U	580 U	340 U	790 U	190 U	320 U	1,400 U	**1,700**	**13,000**	1,700 U	400 U	390 U	390 U	NA	NA
Benzyl alcohol[a]	57	73	55 U	58 U	34 U	79 U	19 U	32 U	140 U	**2,400**	**31,000**	**300**	40 U	**110**	39 U	NA	NA
bis(2-Chloroethoxy) methane		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
Bis-(2-chloroethyl) ether		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
Carbazole		J	**36** J	**270**	34 U	**77** J	**14** J	**93**	140 U	100 U	120 U	170 U	**160**	**85**	**140**	NA	NA
Dibenzofuran	540	540	55 U	**65**	34 U	79 U	19 U	**34**	140 U	100 U	120 U	170 U	**34** J	**36** J	**60**	NA	NA
Hexachlorobenzene	22	70 U	55 U	58 U	34 U	**47** J	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
Hexachlorobutadiene	11	120 U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
Hexachlorocyclopentadiene		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
Hexachloroethane		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
Isophorone		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	**270**	170 U	**20** J	39 U	39 U	NA	NA
Nitrobenzene		U	55 U	58 U	34 U	79 U	19 U	32 U	140 U	100 U	120 U	170 U	40 U	39 U	39 U	NA	NA
N-Nitroso-di-n-propylamine		U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
N-Nitrosodiphenylamine	28	40 U	55 U	58 U	34 U	79 U	19 U	59 Y	140 U	100 U	120 U	170 U	40 U	39 U	**28** J	NA	NA
Pentachlorophenol[a]	360	690 U	270 U	290 U	170 U	400 U	96 U	160 U	720 U	510 U	600 U	840 U	200 U	200 U	200 U	NA	NA
Phenol[a]	420	1,200 U	55 U	58 U	34 U	**70** J	19 U	**22** J	140 U	**410**	**3,500**	**360**	**41**	**28** J	39 U	NA	NA

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Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			MH209	MH210	MH211	MH212	MH213	MH214	MH215	MH216	MH217	MH218	MH219	MH220	MH221	MH222	MH223
Lab Ref			OL20	OL20	OQ56	OS39	OW77	OW77	OY94	OZ57	OZ57	OZ57	OZ57	OZ76	OZ76	OZ99	OZ99
Type			Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
Outfall			Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	S River SD	16th Ave S SD	16th Ave S SD	16th Ave S SD	WSDOT SD-S Ryan St	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	1st Ave S SD (west side)	S River St SD	S River St SD	S Brighton SD	S Brighton SD
Date	SQS/ LAET	CSL/ 2LAET	02/04/09	02/04/09	03/12/09	03/26/09	04/24/09	04/24/09	05/13/09	05/19/09	05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/21/09	05/21/09
2,4-Dimethylphenol[a]	29	29	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
2,4-Dinitrophenol			NA	200 U	1,600 U	1,000 U	680 U	650 U	610 U	580 U	1,400 U	2,200 U	2,600 U	1,200 U	1,200 U	200 U	580
2,4-Dinitrotoluene			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
2,6-Dinitrotoluene			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
2-Chloronaphthalene			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
2-Chlorophenol			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
2-Methylnaphthalene			NA	20 U	160 U	100 U	68 U	**76**	61 U	58 U	140 U	220 U	260 U	120 U	120 U	**41**	58
2-Methylphenol[a]	63	63	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
2-Nitroaniline			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
2-Nitrophenol			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
3,3'-Dichlorobenzidine			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
3-Nitroaniline			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
4,6-Dinitro-2-methylphenol			NA	200 U	1,600 U	1,000 U	680 U	650 U	610 U	580 U	1,400 U	2,200 U	2,600 U	1,200 U	1,200 U	200 U	580
4-Bromophenyl-phenylether			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
4-Chloro-3-methylphenol			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
4-Chloroaniline			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
4-Chlorophenyl-phenylether			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
4-Methylphenol[a]	670	670	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	**450**	**510**	120 U	120 U	20 U	58
4-Nitroaniline			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
4-Nitrophenol			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
Benzoic acid[a]	650	650	NA	200 U	1,600 U	1,000 U	680 U	650 U	610 U	580 U	1,400 U	2,200 U	2,600 U	1,200 U	1,200 U	200 U	580
Benzyl alcohol[a]	57	73	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
bis(2-Chloroethoxy) methane			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
Bis-(2-chloroethyl) ether			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
Carbazole			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	170 J	**210** J	120 U	120 U	**350**	**93**
Dibenzofuran	540	540	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	**53**	58
Hexachlorobenzene	22	70	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
Hexachlorobutadiene	11	120	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
Hexachlorocyclopentadiene			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
Hexachloroethane			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
Isophorone			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
Nitrobenzene			NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58
N-Nitroso-di-n-propylamine			NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
N-Nitrosodiphenylamine	28	40	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	**36**
Pentachlorophenol[a]	360	690	NA	97 U	810 U	520 U	340 U	330 U	300 U	290 U	710 U	1,100 U	1,300 U	580 U	580 U	99 U	290
Phenol[a]	420	1,200	NA	20 U	160 U	100 U	68 U	65 U	61 U	58 U	140 U	220 U	260 U	120 U	120 U	20 U	58

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Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			MH224	MH225	MH226	MH227	MH228	MH229	MH230	MH231	MH232	MH233	MH234	MH235	MH236	MH237
Lab Ref			OZ99	OZ99	PA21	PA21	PA21	PA21	PA42	PA42	PA42	PA42	PA42	PA42	PA57	PB04
Type			Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
Outfall			S Brighton SD	S Brighton SD	S Brighton SD	S Brighton SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	S River St SD	Diagonal Ave S CSO/SD	SW Idaho SD
Date	SQS/ LAET	CSL/ 2LAET	05/21/09	05/21/09	05/26/09	05/26/09	05/26/09	05/26/09	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/28/09	06/02/09
2,4-Dimethylphenol[a]	29	29 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
2,4-Dinitrophenol		U	580 U	1,700 U	1,900 U	680 U	3,800 U	3,400 U	1,300 U	1,600 U	440 U	1,700 U	400 U	1,800 U	2,400 U	580 U
2,4-Dinitrotoluene		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
2,6-Dinitrotoluene		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
2-Chloronaphthalene		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
2-Chlorophenol		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
2-Methylnaphthalene		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
2-Methylphenol[a]	63	63 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
2-Nitroaniline		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
2-Nitrophenol		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
3,3'-Dichlorobenzidine		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
3-Nitroaniline		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
4,6-Dinitro-2-methylphenol		U	580 U	1,700 U	1,900 U	680 U	3,800 U	3,400 U	1,300 U	1,600 U	440 U	1,700 U	400 U	1,800 U	2,400 U	580 U
4-Bromophenyl-phenylether		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
4-Chloro-3-methylphenol		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
4-Chloroaniline		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
4-Chlorophenyl-phenylether		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
4-Methylphenol[a]	670	670 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	**380**	44 U	170 U	**34** J	180 U	240 U	58 U
4-Nitroaniline		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
4-Nitrophenol		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
Benzoic acid[a]	650	650 U	580 U	1,700 U	1,900 U	680 U	3,800 U	3,400 U	1,300 U	1,600 U	440 U	1,700 U	400 U	1,800 U	2,400 U	580 U
Benzyl alcohol[a]	57	73 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
bis(2-Chloroethoxy) methane		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Bis-(2-chloroethyl) ether		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Carbazole			58 U	170 U	**110** J	**150**	380 U	340 U	130 U	**81** J	44 U	170 U	40 U	**110** J	240 U	58 U
Dibenzofuran	540	540 U	58 U	170 U	190 U	**49** J	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Hexachlorobenzene	22	70 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Hexachlorobutadiene	11	120 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Hexachlorocyclopentadiene		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
Hexachloroethane		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Isophorone		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
Nitrobenzene		U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	240 U	58 U
N-Nitroso-di-n-propylamine		U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
N-Nitrosodiphenylamine	28	40 J	58 U	660 Y	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	240 Y	240 U	58 U
Pentachlorophenol[a]	360	690 U	290 U	830 U	970 U	340 U	1,900 U	1,700 U	650 U	790 U	220 U	840 U	200 U	880 U	1,200 U	290 U
Phenol[a]	420	1,200 U	58 U	170 U	190 U	68 U	380 U	340 U	130 U	160 U	44 U	170 U	40 U	180 U	**220** J	58 U

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Table 4: Ecology interagency agreement inline samples (dry weight).

Station ID			MH238	MH239	MH240	CB208
Lab Ref			PB04	PB20	PB20	PB20
Type			Inline	Inline	Inline	Inline
Outfall			SW Idaho SD	S 96th St SD	S Garden St SD	KCIA SD#2
Date	SQS/ LAET	CSL/ 2LAET	06/02/09	06/03/09	06/03/09	06/03/09
2,4-Dimethylphenol[a]	29	29	58 U	290 U	2,700 U	20 U
2,4-Dinitrophenol			580 U	2,900 U	27,000 U	200 U
2,4-Dinitrotoluene			290 U	1,400 U	13,000 U	98 U
2,6-Dinitrotoluene			290 U	1,400 U	13,000 U	98 U
2-Chloronaphthalene			58 U	290 U	2,700 U	20 U
2-Chlorophenol			58 U	290 U	2,700 U	20 U
2-Methylnaphthalene			58 U	290 U	**13,000**	20 U
2-Methylphenol[a]	63	63	58 U	290 U	2,700 U	20 U
2-Nitroaniline			290 U	1,400 U	13,000 U	98 U
2-Nitrophenol			290 U	1,400 U	13,000 U	98 U
3,3'-Dichlorobenzidine			290 U	1,400 U	13,000 U	98 U
3-Nitroaniline			290 U	1,400 U	13,000 U	98 U
4,6-Dinitro-2-methylphenol			580 U	2,900 U	27,000 U	200 U
4-Bromophenyl-phenylether			58 U	290 U	2,700 U	20 U
4-Chloro-3-methylphenol			290 U	1,400 U	13,000 U	98 U
4-Chloroaniline			290 U	1,400 U	13,000 U	98 U
4-Chlorophenyl-phenylether			58 U	290 U	2,700 U	20 U
4-Methylphenol[a]	670	670	58 U	**2,800**	2,700 U	20 U
4-Nitroaniline			290 U	1,400 U	13,000 U	98 U
4-Nitrophenol			290 U	1,400 U	13,000 U	98 U
Benzoic acid[a]	650	650	580 U	2,900 U	27,000 U	200 U
Benzyl alcohol[a]	57	73	58 U	**410**	2,700 U	20 U
bis(2-Chloroethoxy) methane			58 U	290 U	2,700 U	20 U
Bis-(2-chloroethyl) ether			58 U	290 U	2,700 U	20 U
Carbazole			58 U	290 U	**1,500** J	**25**
Dibenzofuran	540	540	58 U	290 U	2,700 U	20 U
Hexachlorobenzene	22	70	58 U	290 U	2,700 U	20 U
Hexachlorobutadiene	11	120	58 U	290 U	2,700 U	20 U
Hexachlorocyclopentadiene			290 U	1,400 U	13,000 U	98 U
Hexachloroethane			58 U	290 U	2,700 U	20 U
Isophorone			58 U	290 U	2,700 U	20 U
Nitrobenzene			58 U	290 U	2,700 U	20 U
N-Nitroso-di-n-propylamine			290 U	1,400 U	13,000 U	98 U
N-Nitrosodiphenylamine	28	40	58 U	290 U	2,700 U	20 U
Pentachlorophenol[a]	360	690	290 U	1,400 U	13,000 U	98 U
Phenol[a]	420	1,200	58 U	**420**	2,700 U	20 U

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Table 5: Ecology interagency agreement sieve/size fractionation samples (dry weight).

Station ID			MH223 bulk	MH227 <63 um	MH227 63-250 um	MH227 >250 um	RCB211 bulk	RCB212 bulk	RCB212 <63 um	RCB212 62-250 um	RCB212 >250 um	MH228 bulk	MH229 <63 um	MH229 63-250 um	MH229 >250 um
Lab Ref			OZ99	PB26	PB26	PB26	PA21	PB11	PB11	PB11	PB11	PA21	PB26	PB26	PB26
Type			Inline	Sieve	Sieve	Sieve	RCB	Sieve	Sieve	Sieve	Sieve	Inline	Sieve	Sieve	Sieve
Outfall			S Brighton SD	#N/A	#N/A	#N/A	S Brighton CSO/SD	S Brighton CSO/SD	S Brighton CSO/SD	S Brighton CSO/SD	S Brighton CSO/SD	7th Ave S SD	#N/A	#N/A	#N/A
Date	SQS/ LAET	CSL/ 2LAET	05/21/09	05/26/09	05/26/09	05/26/09	05/26/09	06/02/09	06/02/09	06/02/09	06/02/09	05/26/09	05/26/09	05/26/09	05/26/09
Total solids (%)			84.2	37	77.6	80.3	59.3	59.2	60	67.2	53.6	50.6	51.7	45	73.9
Total organic carbon (%)			0.897	NA	0.499	0.879	7.11	6.52	19.3	3.98	10.6	5.65	5.59	5	5.63
Metals (mg/kg)															
Arsenic	57	93	1,420 J	NA	410 J	1,540 J	23 J	21 J	17 J	19 J	16 J	20 J	30 J	30 J	30 J
Copper	390	390	831 J	NA	486 J	921 J	230 J	186 J	195 J	156 J	101 J	135 J	191 J	158 J	88 J
Lead	450	530	977 J	NA	485 J	1,120 J	170 J	183 J	204 J	111 J	122 J	121 J	188 J	148 J	59 J
Mercury	0.41	0.59	0.13 J	NA	0.43 J	0.14 J	0.13 J	0.13 J	0.25 J	0.09 J	0.04 J	0.22 J	0.26 J	0.19 J	0.04 J
Zinc	410	960	4,000 J	NA	1,410 J	4,400 J	938 J	949 J	1,130 J	466 J	587 J	477 J	618 J	531 J	416 J
Total petroleum hydrocarbons (mg/kg)															
TPH-diesel	2,000[b]		370	NA	440	420	3,000	4,800	3,200	1,500	1,600	680	1,800	1,700	800
TPH-oil	2,000[b]		760	NA	750	650	13,000	20,000	11,000	4,900	6,700	2,600	8,800	8,200	3,700
LPAH (ug/kg DW)															
Acenaphthene	500	500	87	NA	140	62 J	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Acenaphthylene	1,300	1,300	58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Anthracene	960	960	290	NA	950	380	310 U	380 U	400 U	220 U	250 J	380 U	61 J	82 J	100 J
Fluorene	540	540	75	NA	140	50 J	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Naphthalene	2,100	2,100	58 U	NA	110 U	97 U	180 J	210 J	400 U	110 J	170 J	380 U	84 U	120 U	78 U
Phenanthrene	1,500	1,500	320	NA	1,000	230	740	880	700 J	540 J	690 J	210 J	220 J	380 J	77 J
HPAH (ug/kg DW)															
Benzo(a)anthracene	1,300	1,600	180	NA	840	250	400	440	330 J	280 J	1,100 J	250 J	260 J	410 J	68 J
Benzo(a)pyrene	1,600	1,600	140	NA	860	200	360	380	210 J	260 J	780 J	380	540 J	560 J	98 J
Benzo(b)fluoranthene	3,200	3,600	140	NA	800	190	500	610	450 J	350 J	1,000 J	420	580 J	580 J	100 J
Benzo(g,h,i)perylene	670	720	34 J	NA	330	89 J	360	380 J	400 U	140 J	230 J	340 J	260 J	270 J	80 J
Benzo(k)fluoranthene	3,200	3,600	180	NA	690	200	500	610	450 J	350 J	1,000 J	420	580 J	580 J	100 J
Chrysene	1,400	2,800	300	NA	1,200	330	1,200	1,400	1,000 J	700 J	2,200 J	530	550 J	650 J	180 J
Dibenz(a,h)anthracene	230	540	58 U	NA	150	97 U	310 U	380 U	400 U	220 U	250 U	380 U	83 J	120 U	78 U
Fluoranthene	1,700	2,500	880	NA	2,300	800	1,600	2,400	2,100 J	1,400 J	2,900 J	650	1,200 J	1,400 J	220 J
Indeno(1,2,3-cd)pyrene	600	690	36 J	NA	350	81 J	180 J	220 J	400 U	220 U	170 J	240 J	190 J	220 J	59 J
Pyrene	2,600	3,300	630	NA	1,900	660	1,100	1,700	700 J	510 J	1,200 J	600	610 J	680 J	130 J
Phthalates (ug/kg DW)															
Bis(2-ethylhexyl)phthalate	1,300	1,900	820	NA	1,500	740	24,000	38,000	29,000 J	14,000 J	11,000 J	4,900	5,200 J	4,200 J	940 J
Butylbenzylphthalate	63	900	58 U	NA	110 U	97 U	3,000	5,000	3,100 J	2,900 J	2,100 J	380 U	250 J	470 J	92 J
Diethylphthalate	200	200	58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Dimethylphthalate	71	160	58 U	NA	110 U	97 U	310 U	380 U	400 U	160 J	210 J	380 U	56 J	120 J	78 U
Di-n-butylphthalate	1,400	1,400	58 U	NA	110 U	97 U	630	970	670 J	840 J	1,000 J	380 U	68 J	170 J	74 J
Di-n-octyl phthalate	6,200	–	580	NA	840	460	2,900	4,800	4,400 J	1,900 J	1,200 J	310 J	100 J	180 J	78 U
PCBs (ug/kg DW)															
Aroclor 1016			20 U	250 U	38 U	19 U	96 U	99 U	20 U	20 U	20 U	98 U	39 U	39 U	39 U
Aroclor 1221			20 U	250 U	38 U	19 U	96 U	99 U	20 U	20 U	20 U	98 U	39 U	39 U	39 U
Aroclor 1232			20 U	250 U	38 U	19 U	96 U	99 U	20 U	20 U	20 U	98 U	39 U	39 U	39 U
Aroclor 1242			20 U	250 U	38 U	19 U	96 U	99 U	20 U	20 U	20 U	98 U	39 U	39 U	39 U
Aroclor 1248			20 U	450	49	25	180	210	180	110	78	98 U	39 U	39 U	39 U
Aroclor 1254			40	660	69	34	180	240	170	120	79	140	200	220	48
Aroclor 1260			39	670	79	34	110	150 J	100	82	51	310	450	390	92
Total PCBs	130	1,000	79	1,780	197	93	470	600 J	450	312	208	450	650	610	140

Table 5: Ecology interagency agreement sieve/size fractionation samples (dry weight).

Station ID			RCB213 bulk	RCB214 bulk	RCB214 <63 um	RCB214 63-250 um	RCB214 >250 um	MH220 bulk	MH235 <63 um	MH235 63-250 um	MH235 >250 um	CB202 bulk	CB205 bulk	CB205 <63 um	CB205 63-250 um	CB205 >250 um
Lab Ref			PA42	PC14	PC14	PC14	PC14	OZ76	PC92	PC92	PC92	OZ76	PC73	PC73	PC73	PC73
Type			RCB	RCB				Inline	Sieve	Sieve	Sieve	CB	CB	Sieve	Sieve	Sieve
Outfall			7th Ave S SD	#N/A	7th Ave S SD	7th Ave S SD	7th Ave S SD	S River St SD	#N/A	#N/A	#N/A	S River St SD	#N/A	S River St SD	S River St SD	S River St SD
Date	SQS/ LAET	CSL/ 2LAET	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/20/09	05/27/09	05/27/09	05/27/09	05/20/09	05/27/09	05/27/09	05/27/09	05/27/09
Total solids (%)			74.1	74.2	59	75.3	73.9	58.2	57.2	60.8	51.9	60.9	62.6	59.4	71.9	71.7
Total organic carbon (%)			6.2	4.54	6.15	2.22	2.18	7.3	4.78	5.33	6.69	4.44	3.78	3.29	2.55	5.14
Metals (mg/kg)																
Arsenic	57	93	**17** J	**15** J	**30** J	**16** J	**12** J	**51** J	**100** J	**110** J	**170** J	**32** J	**27** J	**40** J	**38** J	**25** J
Copper	390	390	**127** J	**98** J	**297** J	**142** J	**49** J	**251** J	**496** J	**479** J	**574** J	**106** J	**94.8** J	**139** J	**95** J	**63** J
Lead	450	530	**116** J	**91** J	**349** J	**106** J	**28** J	**245** J	**637** J	**447** J	**478** J	**49** J	**44** J	**84** J	**64** J	**33** J
Mercury	0.41	0.59	**0.09** J	**0.08** J	**0.33** J	**0.06** J	0.03 UJ	**0.20** J	**0.42** J	**0.25** J	**0.19** J	**0.04** J	**0.04** J	**0.09** J	**0.04** J	0.03 UJ
Zinc	410	960	**249** J	**230** J	**683** J	**224** J	**106** J	**790** J	**1,270** J	**1,150** J	**1,510** J	**413** J	**346** J	**491** J	**422** J	**265** J
Total petroleum hydrocarbons (mg/kg)																
TPH-diesel	2,000[b]		**840**	**700**	**1,000**	**330**	**160**	**1,100**	**2,800**	**2,300**	**2,200**	**640**	**910**	**970**	**500**	**260**
TPH-oil	2,000[b]		**4,000**	**3,600**	**6,100**	**2,200**	**1,200**	**2,800**	**9,700**	**6,500**	**6,800**	**2,800**	**4,700**	**6,500**	**3,600**	**1,800**
LPAH (ug/kg DW)																
Acenaphthene	500	500	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	**29** J	**45** J	**30** J
Acenaphthylene	1,300	1,300	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
Anthracene	960	960	160 U	140 U	240 U	160 U	120 U	**94** J	**86** J	**160**	**190**	**120**	**91** J	**64**	**120**	**150**
Fluorene	540	540	160 U	140 U	240 U	160 U	120 U	120 U	92 U	**68** J	**66** J	**77** J	180 U	**45** J	**65**	**60**
Naphthalene	2,100	2,100	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	**29** J	59 U
Phenanthrene	1,500	1,500	**210**	**120** J	**350** J	**180** J	**130** J	**370**	**290**	**790**	**680**	**610**	**490**	**370**	**660**	**460**
HPAH (ug/kg DW)																
Benzo(a)anthracene	1,300	1,600	**130** J	**120** J	**360** J	160 U	**140** J	**440**	**430**	**910**	**640**	**320**	**360**	**370**	**370**	**330**
Benzo(a)pyrene	1,600	1,600	**140** J	**120** J	**370** J	**160** J	**130** J	**570**	**960**	**1,400**	**1,200**	**230**	**340**	**240**	**490**	**330**
Benzo(b)fluoranthene	3,200	3,600	**180**	**150**	**560** J	**170** J	120 U	**510**	**820**	**1,200**	**990**	**250**	**470**	**330**	**490**	**300**
Benzo(g,h,i)perylene	670	720	**82** J	**72** J	240 U	160 U	120 U	**430**	**370**	**480**	**460**	**160**	**200**	**130**	**200**	**150**
Benzo(k)fluoranthene	3,200	3,600	**180**	**150**	**560** J	**170** J	120 U	**510**	**820**	**1,200**	**990**	**250**	**420**	**330**	**490**	**300**
Chrysene	1,400	2,800	**380**	**320**	**900** J	**300** J	**230** J	**640**	**920**	**1,500**	**1,300**	**530**	**740**	**370**	**860**	**590**
Dibenz(a,h)anthracene	230	540	160 U	140 U	240 U	160 U	120 U	**61** J	**120**	**200**	**150**	120 U	180 U	**40** J	**59**	**80**
Fluoranthene	1,700	2,500	**640**	**320**	**1,300** J	**480** J	320 J	**1,000**	**1,200**	**2,300**	**1,800**	**980**	**1,200**	**960**	**1,600**	**950**
Indeno(1,2,3-cd)pyrene	600	690	160 U	140 U	240 U	160 U	120 U	**320**	**310**	**450**	**400**	**120** J	**130** J	**92**	**140**	**130**
Pyrene	2,600	3,300	**430**	**290**	**730** J	**280** J	**230** J	**920**	**1,300**	**2,000**	**1,800**	**860**	**870**	**690**	**1,100**	**620**
Phthalates (ug/kg DW)																
Bis(2-ethylhexyl)phthalate	1,300	1,900	**2,200**	**2,600**	**7,400** J	**1,500** J	**950** J	**1,600**	**2,100**	**2,900**	**6,000**	**2,800**	**7,400**	**4,400**	**3,200**	**2,500**
Butylbenzylphthalate	63	900	**220**	**390**	240 U	**230** J	120 U	**1,300**	**270**	**360**	**530**	**150**	**170** J	58 U	**240**	**410**
Diethylphthalate	200	200	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
Dimethylphthalate	71	160	**400**	**180**	240 U	**170** J	**460** J	120 U	92 U	**73** J	**130**	**120** J	**160** J	58 U	**120**	**660**
Di-n-butylphthalate	1,400	1,400	160 U	140 U	240 U	160 U	120 U	**78** J	92 U	**120** J	**270**	**81** J	180 U	58 U	**140**	**43** J
Di-n-octyl phthalate	6,200	–	**340**	**200**	**480** J	160 U	120 U	120 U	92 U	130 U	**3,500**	**150**	**270**	**220**	**140**	**150**
PCBs (ug/kg DW)																
Aroclor 1016			20 U	20 U	39 U	38 U	19 U	18 U	200 U	190 U	190 U	18 U	20 U	39 U	39 U	20 U
Aroclor 1221			20 U	20 U	39 U	38 U	19 U	18 U	200 U	190 U	190 U	18 U	20 U	39 U	39 U	20 U
Aroclor 1232			20 U	20 U	39 U	38 U	19 U	18 U	200 U	190 U	190 U	18 U	20 U	39 U	39 U	20 U
Aroclor 1242			**110**	**87**	**270**	**66**	**27**	18 U	200 U	190 U	190 U	18 U	20 U	39 U	39 U	20 U
Aroclor 1248			20 U	20 U	39 U	38 U	19 U	**20**	200 U	190 U	190 U	18 U	20 U	39 U	39 U	20 U
Aroclor 1254			**76**	**55**	**200**	**54**	**36**	**160** J	**310**	**250**	**240**	**32**	**34**	**48**	**45**	20 U
Aroclor 1260			**65**	**53**	**290**	**79**	**39**	**190**	**490**	**400**	**340**	**22**	**22**	**41**	39 U	20 U
Total PCBs	130	1,000	**251**	**195**	**760**	**199**	**102**	**370** J	**800**	**650**	**580**	**54**	**56**	**89**	**45**	20 U

Table 5: Ecology interagency agreement sieve/size fractionation samples (dry weight).

Station ID			MH231 bulk	MH236 <63 um	MH236 63-250 um	MH236 >250 um	RCB215 bulk	RCB216 bulk	RCB216 <63 um	RCB216 63-250 um	RCB216 >250 um	MH237 bulk	MH238 <63 um	MH238 63-250 um	MH238 >250 um
Lab Ref			PA42	PD05	PD05	PD05	PA57	PD17	PD17	PD17	PD17	PB04	PD72	PD72	PD72
Type			Inline	Sieve	Sieve	Sieve	RCB	RCB	Sieve	Sieve	Sieve	Inline	Sieve	Sieve	Sieve
Outfall			Diagonal Ave S CSO/SD	#N/A	#N/A	#N/A	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	SW Idaho SD	SW Idaho SD	SW Idaho SD	SW Idaho SD
Date	SQS/ LAET	CSL/ 2LAET	05/27/09	05/28/09	05/28/09	05/28/09	05/28/09	05/28/09	05/28/09	05/28/09	05/28/09	06/02/09	06/02/09	06/02/09	06/02/09
Total solids (%)			65.6	53.7	69.3	74.4	78.1	78.4	53.5	71.6	70.3	80.4	62.3	70.4	82.3
Total organic carbon (%)			5.26	4.34	1.57	3.96	4.5	4.49	6.7	4.82	3.96	3.09	3.56	1.31	1.73
Metals (mg/kg)															
Arsenic	57	93	**50** J	**76** J	**57** J	**37** J	7 UJ	**6** J	**24** J	**15** J	**12** J	30 UJ	**40** J	**20** J	**20** J
Copper	390	390	**387** J	**713** J	**580** J	**277** J	**78** J	**69.5** J	**230** J	**77** J	**25** J	**109** J	**185** J	**63** J	**59** J
Lead	450	530	**374** J	**776** J	**603** J	**311** J	**59** J	**43** J	**298** J	**75** J	**40** J	**70** J	**130** J	**46** J	**14** J
Mercury	0.41	0.59	**0.10** J	**0.48** J	**0.11** J	**0.06** J	**0.08** J	**0.03** J	**0.09** J	**0.03** J	0.02 UJ	**0.05** J	**0.09** J	**0.02** J	0.03 UJ
Zinc	410	960	**650** J	**1,100** J	**499** J	**442** J	**721** J	**510** J	**1,330** J	**505** J	**174** J	**222** J	**427** J	**174** J	**95** J
Total petroleum hydrocarbons (mg/kg)															
TPH-diesel	2,000[b]		**660**	**1,500**	**660**	**500**	**1,000**	**1,200**	**1,800**	**1,300**	**460**	**520**	130	70 U	60 U
TPH-oil	2,000[b]		**3,300**	**7,700**	**3,700**	**2,700**	**4,600**	**4,800**	**12,000**	**8,300**	**2,900**	**380**	**1,200**	**530**	**280**
LPAH (ug/kg DW)															
Acenaphthene	500	500	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Acenaphthylene	1,300	1,300	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Anthracene	960	960	**100** J	**85** J	**61** J	**57** J	210 U	220 U	300 U	**120** J	110 U	58 U	20 U	20 U	19 U
Fluorene	540	540	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Naphthalene	2,100	2,100	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Phenanthrene	1,500	1,500	**430**	**440**	**320**	**300**	**560**	**520**	**920**	**680**	**150**	**34** J	**50**	**110**	19 U
HPAH (ug/kg DW)															
Benzo(a)anthracene	1,300	1,600	**460**	**470**	**290**	**280**	**420**	**350**	**580**	**460**	**180**	**40** J	**66**	**130**	19 U
Benzo(a)pyrene	1,600	1,600	**550**	**630**	**410**	**310**	**360**	**330**	**670**	**360**	**190**	**51** J	**140**	**180**	19 U
Benzo(b)fluoranthene	3,200	3,600	**600**	**680**	**420**	**270**	**380**	**360**	**610**	**390**	**150**	**55** J	**180**	**200**	19 U
Benzo(g,h,i)perylene	670	720	**340**	**270**	**180**	**140**	**220**	**190** J	**260** J	**250**	**130**	**110** J	**160**	**100**	19 U
Benzo(k)fluoranthene	3,200	3,600	**600**	**680**	**420**	**270**	**380**	**250**	**610**	**390**	**150**	**55** J	**200**	**230**	19 U
Chrysene	1,400	2,800	**970**	**1,100**	**780**	**450**	**990**	**860**	**1,700**	**1,000**	**360**	**76** J	**160**	**190**	19 U
Dibenz(a,h)anthracene	230	540	160 U	**90** J	**58** J	**38** J	210 U	220 U	300 U	220 U	110 U	58 U	20 U	**32**	19 U
Fluoranthene	1,700	2,500	**1,400**	**1,800**	**1,200**	**830**	**860**	**730**	**1,900**	**1,200**	**280**	**94** J	**180**	**310**	19 U
Indeno(1,2,3-cd)pyrene	600	690	**220**	**180**	**120**	**120**	**140** J	220 U	300 U	220 U	**76** J	**46** J	**82**	**71**	19 U
Pyrene	2,600	3,300	**1,100**	**1,200**	**780**	**500**	**980**	**820**	**1,300**	**860**	**200**	**68** J	**150**	**190**	19 U
Phthalates (ug/kg DW)															
Bis(2-ethylhexyl)phthalate	1,300	1,900	**6,200**	**7,800**	**3,700**	**11,000**	**9,400**	**4,600**	**9,600**	**5,100**	**38,000**	**170** J	**370**	**630**	**220**
Butylbenzylphthalate	63	900	**150** J	160 U	**86**	**130**	**200** J	**160** J	300 U	**300**	**86** J	**47** J	20 U	**160**	19 U
Diethylphthalate	200	200	160 U	160 U	85 U	74 U	**200** J	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Dimethylphthalate	71	160	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	**72** J	58 U	20 U	20 U	19 U
Di-n-butylphthalate	1,400	1,400	160 U	160 U	**71** J	74 U	**160** J	**530**	300 U	220 U	**120**	58 U	20 U	**38**	19 U
Di-n-octyl phthalate	6,200	–	**280**	**250**	**80** J	**140**	**1,300**	**200** J	**470**	**200** J	**320**	58 U	20 U	**40**	19 U
PCBs (ug/kg DW)															
Aroclor 1016			98 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor 1221			98 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor 1232			98 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor 1242			98 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor 1248			98 U	**200**	**98**	**78**	20 U	20 U	37 Y	**25**	20 U	20 U	20 U	20 U	19 U
Aroclor 1254			**110**	**270**	**130**	**83**	**37**	**24**	**70**	**51**	20 U	20 U	20 U	20 U	19 U
Aroclor 1260			**190**	**360**	**270**	**78**	**57**	**53**	**210**	**260**	**31**	20 U	20 U	20 U	19 U
Total PCBs	130	1,000	**300**	**830**	**498**	**239**	**94**	**77**	**280**	**336**	**31**	20 U	20 U	20 U	19 U

Table 5: Ecology interagency agreement sieve/size fractionation samples (dry weight).

Station ID			RCB219 bulk	RCB220 bulk	RCB220 <63 um	RCB220 63-250 um	RCB220 >250 um
Lab Ref			PB04	PD59	PD59	PD59	PD59
Type			RCB	RCB	Sieve	Sieve	Sieve
Outfall			SW Idaho SD	#N/A	#N/A	#N/A	#N/A
Date	SQS/ LAET	CSL/ 2LAET	06/02/09	06/02/09	06/02/09	06/02/09	06/02/09
Total solids (%)			72.2	73.5	43.5	66.9	74.3
Total organic carbon (%)			4.53	6.06	10.6	5.65	3.43
Metals (mg/kg)							
Arsenic	57	93	**9** J	**8** J	**20** J	**12** J	**10** J
Copper	390	390	**25.1** J	**23.6** J	**110** J	**55** J	**34** J
Lead	450	530	**20** J	**7** J	**165** J	**44** J	**16** J
Mercury	0.41	0.59	0.03 UJ	0.03 UJ	**0.12** J	0.03 UJ	0.03 UJ
Zinc	410	960	**80** J	**58** J	**430** J	**130** J	**58** J
Total petroleum hydrocarbons (mg/kg)							
TPH-diesel	2,000[b]		**150**	**160**	**1,500**	**660**	**150**
TPH-oil	2,000[b]		**980**	**940**	**9,900**	**4,500**	**1,400**
LPAH (ug/kg DW)							
Acenaphthene	500	500	66 U	58 U	360 U	160 U	99 U
Acenaphthylene	1,300	1,300	66 U	58 U	360 U	160 U	99 U
Anthracene	960	960	66 U	58 U	360 U	160 U	99 U
Fluorene	540	540	66 U	58 U	360 U	160 U	99 U
Naphthalene	2,100	2,100	66 U	**34** J	360 U	160 U	99 U
Phenanthrene	1,500	1,500	**62** J	**45** J	**430**	**350**	99 U
HPAH (ug/kg DW)							
Benzo(a)anthracene	1,300	1,600	**50** J	**35** J	**370**	**270**	99 U
Benzo(a)pyrene	1,600	1,600	**58** J	**50** J	**820**	**440**	99 U
Benzo(b)fluoranthene	3,200	3,600	**85** J	**88** J	**1,600**	**710**	**68** J
Benzo(g,h,i)perylene	670	720	**60** J	**52** J	**710**	**240**	99 U
Benzo(k)fluoranthene	3,200	3,600	**85** J	**88** J	**1,600**	**710**	**68** J
Chrysene	1,400	2,800	**130** J	**120** J	**1,600**	**740**	**110**
Dibenz(a,h)anthracene	230	540	66 U	58 U	360 U	160 U	99 U
Fluoranthene	1,700	2,500	**120** J	**92** J	**1,200**	**790**	**87** J
Indeno(1,2,3-cd)pyrene	600	690	**49** J	**34** J	**490**	**200**	99 U
Pyrene	2,600	3,300	**77** J	**61** J	**820**	**440**	**66** J
Phthalates (ug/kg DW)							
Bis(2-ethylhexyl)phthalate	1,300	1,900	**620** J	**780** J	**14,000**	**3,800**	**1,100**
Butylbenzylphthalate	63	900	66 U	58 U	360 U	160 U	99 U
Diethylphthalate	200	200	66 U	58 U	360 U	160 U	99 U
Dimethylphthalate	71	160	66 U	**60** J	360 U	160 U	99 U
Di-n-butylphthalate	1,400	1,400	66 U	58 U	360 U	160 U	99 U
Di-n-octyl phthalate	6,200	–	**85** J	**100** J	**1,800**	**300**	**75** J
PCBs (ug/kg DW)							
Aroclor 1016			20 U	20 U	20 U	20 U	20 U
Aroclor 1221			20 U	20 U	20 U	20 U	20 U
Aroclor 1232			20 U	20 U	20 U	20 U	20 U
Aroclor 1242			20 U	20 U	20 U	20 U	20 U
Aroclor 1248			20 U	20 U	20 U	20 U	20 U
Aroclor 1254			20 U	20 U	20 U	**20**	20 U
Aroclor 1260			20 U	20 U	20 U	20 U	20 U
Total PCBs	130	1,000	20 U	20 U	20 U	**20**	20 U

Table 5: Ecology interagency agreement sieve/size fractionation samples (dry weight).

Station ID			MH223 bulk	MH227 <63 um	MH227 63-250 um	MH227 >250 um	RCB211 bulk	RCB212 bulk	RCB212 <63 um	RCB212 62-250 um	RCB212 >250 um	MH228 bulk	MH229 <63 um	MH229 63-250 um	MH229 >250 um
Lab Ref			OZ99	PB26	PB26	PB26	PA21	PB11	PB11	PB11	PB11	PA21	PB26	PB26	PB26
Type			Inline	Sieve	Sieve	Sieve	RCB	Sieve	Sieve	Sieve	Sieve	Inline	Sieve	Sieve	Sieve
Outfall			S Brighton SD	#N/A	#N/A	#N/A	S Brighton CSO/SD	S Brighton CSO/SD	S Brighton CSO/SD	S Brighton CSO/SD	S Brighton CSO/SD	7th Ave S SD	#N/A	#N/A	#N/A
Date	SQS/ LAET	CSL/ 2LAET	05/21/09	05/26/09	05/26/09	05/26/09	05/26/09	06/02/09	06/02/09	06/02/09	06/02/09	05/26/09	05/26/09	05/26/09	05/26/09
Other organic compounds (ug/kg DW)															
1,2,4-Trichlorobenzene			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
1,2-Dichlorobenzene			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
1,3-Dichlorobenzene			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
1,4-Dichlorobenzene	110	110	58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
2,2'-Oxybis(1-chloropropane)			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
2,4,5-Trichlorophenol			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
2,4,6-Trichlorophenol			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
2,4-Dichlorophenol			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
2,4-Dimethylphenol[a]	29	29	58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
2,4-Dinitrophenol			580 U	NA	1,100 U	970 U	3,100 U	3,800 U	4,000 U	2,200 U	2,500 U	3,800 U	840 U	1,200 U	780 U
2,4-Dinitrotoluene			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
2,6-Dinitrotoluene			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
2-Chloronaphthalene			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
2-Chlorophenol			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
2-Methylnaphthalene			58 U	NA	110 U	97 U	**220** J	**500**	**280** J	**170** J	**200** J	380 U	84 U	120 U	78 U
2-Methylphenol[a]	63	63	58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
2-Nitroaniline			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
2-Nitrophenol			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
3,3'-Dichlorobenzidine			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
3-Nitroaniline			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
4,6-Dinitro-2-methylphenol			580 U	NA	1,100 U	970 U	3,100 U	3,800 U	4,000 U	2,200 U	2,500 U	3,800 U	840 U	1,200 U	780 U
4-Bromophenyl-phenylether			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
4-Chloro-3-methylphenol			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
4-Chloroaniline			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
4-Chlorophenyl-phenylether			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
4-Methylphenol[a]	670	670	58 U	NA	110 U	97 U	310 U	**540**	400 U	160 J	250 U	380 U	84 U	120 U	78 U
4-Nitroaniline			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
4-Nitrophenol			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
Benzoic acid[a]	650	650	580 U	NA	1,100 U	970 U	3,100 U	3,800 U	4,000 U	2,200 U	2,500 U	3,800 U	840 U	1,200 U	780 U
Benzyl alcohol[a]	57	73	58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	**570** J
bis(2-Chloroethoxy) methane			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Bis-(2-chloroethyl) ether			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Carbazole			**93**	NA	**230**	**74** J	310 U	380 U	400 U	220 U	130 J	380 U	**54** J	**71** J	78 U
Dibenzofuran	540	540	58 U	NA	**59** J	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Hexachlorobenzene	22	70	58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Hexachlorobutadiene	11	120	58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Hexachlorocyclopentadiene			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
Hexachloroethane			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Isophorone			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Nitrobenzene			58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
N-Nitroso-di-n-propylamine			290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
N-Nitrosodiphenylamine	28	40	**36** J	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U
Pentachlorophenol[a]	360	690	290 U	NA	530 U	480 U	1,500 U	1,900 U	2,000 U	1,100 U	1,300 U	1,900 U	420 U	590 U	390 U
Phenol[a]	420	1,200	58 U	NA	110 U	97 U	310 U	380 U	400 U	220 U	250 U	380 U	84 U	120 U	78 U

Note: Bulk samples and sieve/size fractionation samples collected at each sample location

22 Concentration exceeds SQS/LAET
100 Concentration exceeds CSL/2LAET

Table 5: Ecology interagency agreement sieve/size fractionation samples (dry weight).

Station ID			RCB213 bulk	RCB214 bulk	RCB214 <63 um	RCB214 63-250 um	RCB214 >250 um	MH220 bulk	MH235 <63 um	MH235 63-250 um	MH235 >250 um	CB202 bulk	CB205 bulk	CB205 <63 um	CB205 63-250 um	CB205 >250 um
Lab Ref			PA42	PC14	PC14	PC14	PC14	OZ76	PC92	PC92	PC92	OZ76	PC73	PC73	PC73	PC73
Type			RCB	RCB				Inline	Sieve	Sieve	Sieve	CB	CB	Sieve	Sieve	Sieve
Outfall			7th Ave S SD	#N/A	7th Ave S SD	7th Ave S SD	7th Ave S SD	S River St SD	#N/A	#N/A	#N/A	S River St SD	#N/A	S River St SD	S River St SD	S River St SD
Date	SQS/ LAET	CSL/ 2LAET	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/20/09	05/27/09	05/27/09	05/27/09	05/20/09	05/27/09	05/27/09	05/27/09	05/27/09
Other organic compounds (ug/kg DW)																
1,2,4-Trichlorobenzene			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
1,2-Dichlorobenzene			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
1,3-Dichlorobenzene			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
1,4-Dichlorobenzene	110	110	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
2,2'-Oxybis(1-chloropropane)			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
2,4,5-Trichlorophenol			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
2,4,6-Trichlorophenol			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
2,4-Dichlorophenol			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
2,4-Dimethylphenol[a]	29	29	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
2,4-Dinitrophenol			1,600 U	1,400 U	2,400 U	1,600 U	1,200 U	1,200 U	920 U	1,300 U	1,200 U	1,200 U	1,800 U	580 U	590 U	590 U
2,4-Dinitrotoluene			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
2,6-Dinitrotoluene			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
2-Chloronaphthalene			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
2-Chlorophenol			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
2-Methylnaphthalene			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	70 J	120 U	180 U	**47** J	**42** J	59 U
2-Methylphenol[a]	63	63	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
2-Nitroaniline			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
2-Nitrophenol			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
3,3'-Dichlorobenzidine			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
3-Nitroaniline			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
4,6-Dinitro-2-methylphenol			1,600 U	1,400 U	2,400 U	1,600 U	1,200 U	1,200 U	920 U	1,300 U	1,200 U	1,200 U	1,800 U	580 U	590 U	590 U
4-Bromophenyl-phenylether			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
4-Chloro-3-methylphenol			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
4-Chloroaniline			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
4-Chlorophenyl-phenylether			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
4-Methylphenol[a]	670	670	160 U	100 J	240 U	160 U	120 U	120 U	92 U	130 U	120 U	**620**	**240**	**150**	**110**	59 U
4-Nitroaniline			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
4-Nitrophenol			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
Benzoic acid[a]	650	650	1,600 U	1,400 U	2,400 U	1,600 U	1,200 U	1,200 U	920 U	1,300 U	1,200 U	1,200 U	1,800 U	580 U	590 U	590 U
Benzyl alcohol[a]	57	73	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
bis(2-Chloroethoxy) methane			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
Bis-(2-chloroethyl) ether			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
Carbazole			160 U	140 U	240 U	160 U	120 U	120 U	92 U	**88** J	**90** J	74 J	180 U	**54** J	**88**	**83**
Dibenzofuran	540	540	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
Hexachlorobenzene	22	70	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
Hexachlorobutadiene	11	120	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
Hexachlorocyclopentadiene			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
Hexachloroethane			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
Isophorone			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
Nitrobenzene			160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
N-Nitroso-di-n-propylamine			790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
N-Nitrosodiphenylamine	28	40	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U
Pentachlorophenol[a]	360	690	790 U	700 U	1,200 U	790 U	610 U	580 U	460 U	630 U	600 U	590 U	910 U	290 U	290 U	290 U
Phenol[a]	420	1,200	160 U	140 U	240 U	160 U	120 U	120 U	92 U	130 U	120 U	120 U	180 U	58 U	59 U	59 U

Note: Bulk samples and sieve/size fractionation samples

Table 5: Ecology interagency agreement sieve/size fractionation samples (dry weight).

Station ID			MH231 bulk	MH236 <63 um	MH236 63-250 um	MH236 >250 um	RCB215 bulk	RCB216 bulk	RCB216 <63 um	RCB216 63-250 um	RCB216 >250 um	MH237 bulk	MH238 <63 um	MH238 63-250 um	MH238 >250 um
Lab Ref			PA42	PD05	PD05	PD05	PA57	PD17	PD17	PD17	PD17	PB04	PD72	PD72	PD72
Type			Inline	Sieve	Sieve	Sieve	RCB	RCB	Sieve	Sieve	Sieve	Inline	Sieve	Sieve	Sieve
Outfall			Diagonal Ave S CSO/SD	#N/A	#N/A	#N/A	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	SW Idaho SD	SW Idaho SD	SW Idaho SD	SW Idaho SD
Date	SQS/ LAET	CSL/ 2LAET	05/27/09	05/28/09	05/28/09	05/28/09	05/28/09	05/28/09	05/28/09	05/28/09	05/28/09	06/02/09	06/02/09	06/02/09	06/02/09
Other organic compounds (ug/kg DW)															
1,2,4-Trichlorobenzene			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
1,2-Dichlorobenzene			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
1,3-Dichlorobenzene			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
1,4-Dichlorobenzene	110	110	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
2,2'-Oxybis(1-chloropropane)			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
2,4,5-Trichlorophenol			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
2,4,6-Trichlorophenol			**790 U**	**820 U**	**420 U**	**370 U**	**1,000 U**	**1,100 U**	**1,500 U**	**1,100 U**	**550 U**	**290 U**	**98 U**	**98 U**	**97 U**
2,4-Dichlorophenol			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
2,4-Dimethylphenol[a]	29	29	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
2,4-Dinitrophenol			1,600 U	1,600 U	850 U	740 U	2,100 U	2,200 U	3,000 U	2,200 U	1,100 U	580 U	200 U	200 U	190 U
2,4-Dinitrotoluene			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
2,6-Dinitrotoluene			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
2-Chloronaphthalene			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
2-Chlorophenol			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
2-Methylnaphthalene			160 U	160 U	85 U	74 U	**140** J	**120** J	**260** J	**150** J	110 U	58 U	20 U	20 U	19 U
2-Methylphenol[a]	63	63	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
2-Nitroaniline			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
2-Nitrophenol			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
3,3'-Dichlorobenzidine			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
3-Nitroaniline			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
4,6-Dinitro-2-methylphenol			1,600 U	1,600 U	850 U	740 U	2,100 U	2,200 U	3,000 U	2,200 U	1,100 U	580 U	200 U	200 U	190 U
4-Bromophenyl-phenylether			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
4-Chloro-3-methylphenol			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
4-Chloroaniline			**790 U**	**820 U**	**420 U**	**370 U**	**1,000 U**	**1,100 U**	**1,500 U**	**1,100 U**	**550 U**	**290 U**	**98 U**	**98 U**	**97 U**
4-Chlorophenyl-phenylether			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
4-Methylphenol[a]	670	670	**380**	**140** J	**91**	**79**	**1,800**	**1,600**	**1,600**	**590**	**120**	58 U	**380**	**48**	19 U
4-Nitroaniline			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
4-Nitrophenol			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
Benzoic acid[a]	650	650	1,600 U	1,600 U	850 U	740 U	2,100 U	2,200 U	3,000 U	2,200 U	1,100 U	580 U	200 U	200 U	190 U
Benzyl alcohol[a]	57	73	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
bis(2-Chloroethoxy) methane			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Bis-(2-chloroethyl) ether			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Carbazole			**81** J	160 U	**55** J	40 J	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Dibenzofuran	540	540	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Hexachlorobenzene	22	70	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Hexachlorobutadiene	11	120	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Hexachlorocyclopentadiene			790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
Hexachloroethane			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Isophorone			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Nitrobenzene			160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
N-Nitroso-di-n-propylamine			**790 U**	**820 U**	**420 U**	**370 U**	**1,000 U**	**1,100 U**	**1,500 U**	**1,100 U**	**550 U**	**290 U**	**98 U**	**98 U**	**97 U**
N-Nitrosodiphenylamine	28	40	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	20 U	20 U	19 U
Pentachlorophenol[a]	360	690	790 U	820 U	420 U	370 U	1,000 U	1,100 U	1,500 U	1,100 U	550 U	290 U	98 U	98 U	97 U
Phenol[a]	420	1,200	160 U	160 U	85 U	74 U	210 U	220 U	300 U	220 U	110 U	58 U	**28**	20 U	19 U

Note: Bulk samples and sieve/size fractionation samples

Table 5: Ecology interagency agreement sieve/size fractionation samples (dry weight).

Station ID			RCB219 bulk	RCB220 bulk	RCB220 <63 um	RCB220 63-250 um	RCB220 >250 um
Lab Ref			PB04	PD59	PD59	PD59	PD59
Type			RCB	RCB	Sieve	Sieve	Sieve
Outfall			SW Idaho SD	#N/A	#N/A	#N/A	#N/A
Date	SQS/ LAET	CSL/ 2LAET	06/02/09	06/02/09	06/02/09	06/02/09	06/02/09
Other organic compounds (ug/kg DW)							
1,2,4-Trichlorobenzene			66 U	58 U	360 U	160 U	99 U
1,2-Dichlorobenzene			66 U	58 U	360 U	160 U	99 U
1,3-Dichlorobenzene			66 U	58 U	360 U	160 U	99 U
1,4-Dichlorobenzene	110	110	66 U	58 U	360 U	160 U	99 U
2,2'-Oxybis(1-chloropropane)			66 U	58 U	360 U	160 U	99 U
2,4,5-Trichlorophenol			330 U	290 U	1,800 U	810 U	490 U
2,4,6-Trichlorophenol			**330 U**	**290 U**	**1,800 U**	**810 U**	**490 U**
2,4-Dichlorophenol			330 U	290 U	1,800 U	810 U	490 U
2,4-Dimethylphenol[a]	29	29	66 U	58 U	360 U	160 U	99 U
2,4-Dinitrophenol			660 U	580 U	3,600 U	1,600 U	990 U
2,4-Dinitrotoluene			330 U	290 U	1,800 U	810 U	490 U
2,6-Dinitrotoluene			330 U	290 U	1,800 U	810 U	490 U
2-Chloronaphthalene			66 U	58 U	360 U	160 U	99 U
2-Chlorophenol			66 U	58 U	360 U	160 U	99 U
2-Methylnaphthalene			66 U	58 U	360 U	160 U	99 U
2-Methylphenol[a]	63	63	66 U	58 U	360 U	160 U	99 U
2-Nitroaniline			330 U	290 U	1,800 U	810 U	490 U
2-Nitrophenol			330 U	290 U	1,800 U	810 U	490 U
3,3'-Dichlorobenzidine			330 U	290 U	1,800 U	810 U	490 U
3-Nitroaniline			330 U	290 U	1,800 U	810 U	490 U
4,6-Dinitro-2-methylphenol			660 U	580 U	3,600 U	1,600 U	990 U
4-Bromophenyl-phenylether			66 U	58 U	360 U	160 U	99 U
4-Chloro-3-methylphenol			330 U	290 U	1,800 U	810 U	490 U
4-Chloroaniline			**330 U**	**290 U**	**1,800 U**	**810 U**	**490 U**
4-Chlorophenyl-phenylether			66 U	58 U	360 U	160 U	99 U
4-Methylphenol[a]	670	670	**1,400** J	**1,700** J	**4,100**	**1,500**	**590**
4-Nitroaniline			330 U	290 U	1,800 U	810 U	490 U
4-Nitrophenol			330 U	290 U	1,800 U	810 U	490 U
Benzoic acid[a]	650	650	660 U	580 U	3,600 U	1,600 U	990 U
Benzyl alcohol[a]	57	73	66 U	58 U	360 U	160 U	99 U
bis(2-Chloroethoxy) methane			66 U	58 U	360 U	160 U	99 U
Bis-(2-chloroethyl) ether			66 U	58 U	360 U	160 U	99 U
Carbazole			66 U	58 U	360 U	160 U	99 U
Dibenzofuran	540	540	66 U	58 U	360 U	160 U	99 U
Hexachlorobenzene	22	70	66 U	58 U	360 U	160 U	99 U
Hexachlorobutadiene	11	120	66 U	58 U	360 U	160 U	99 U
Hexachlorocyclopentadiene			330 U	290 U	1,800 U	810 U	490 U
Hexachloroethane			66 U	58 U	360 U	160 U	99 U
Isophorone			66 U	58 U	360 U	160 U	99 U
Nitrobenzene			66 U	58 U	360 U	160 U	99 U
N-Nitroso-di-n-propylamine			**330 U**	**290 U**	**1,800 U**	**810 U**	**490 U**
N-Nitrosodiphenylamine	28	40	66 U	58 U	360 U	160 U	**55** J
Pentachlorophenol[a]	360	690	330 U	290 U	1,800 U	810 U	490 U
Phenol[a]	420	1,200	**45** J	**64** J	360 U	160 U	99 U

Note: Bulk samples and sieve/size fractionation samples