

Table 4.2-1. DEQ ECSI Sites, DEQ Status, and Date of Site Summary.

ECSI^a	Site	Site Status^b	Site Summary (and Addendum)	Date of Site Summary (and Addendum)^c
794	ACF Industries	CNFA	Site Summary Addendum	4/26/2005 2/28/2007
2446	Alder Creek Lumber Company	Site screening recommended	Site Summary	4/26/2005
2261	American Machine & Gear	NFA	No Site Summary	NA
970	Anderson Brothers Property	NFA	Site Summary	5/31/2005
1528	ARCO Bulk Terminal	RI complete, RA	Site Summary Addendum	9/17/2004 2/28/2007
398	Arkema	Consent Decree	Site Summary	2/28/2007
1430	Automatic Vending	PA recommended	No Site Summary	NA
2361	Babcock Land Company	Not in DEQ CUP	Site Summary	3/8/2005
1026	Brazil & Co.	SI recommended	No Site Summary	NA
2362	Burgard Industrial Park - Boydstun Metals	RI	Site Summary	3/8/2005
	Burgard Industrial Park - Noncontiguous	RI	Site Summary	3/8/2005
2375	Burgard Industrial Park - Portland Container Repair	RI	Site Summary	3/8/2005
2355	Burgard Industrial Park - Schnitzer Steel	RI	Site Summary	3/8/2005
138	Burgard Industrial Park - NW Pipe	RI	Site Summary	3/8/2005
2454	Calbag Metals - Front Avenue	NFA, stormwater reopened	Site Summary Addendum	3/8/2005 2/28/2007
271	Cascade General/Portland Shipyard (OU1, OU2, Swan Island Upland Fac. - OU3)	RI	Site Summary	2/28/2007
5136	Centennial Mills	DEQ SI	No Site Summary	NA
4920	Chapel Steel	Other remedial action recommended	No Site Summary	NA
2424	Chase Bag	Not in DEQ CUP	Site Summary	3/8/2005
1281	Chevron Asphalt Refinery	Source control decision	Site Summary	2/28/2007
2426	Christenson Oil	XPA	Site Summary	4/26/2005
2452	City of Portland - BES WPCL	MOA, NFA	Site Summary	5/31/2005
2425	City of Portland Outfalls (RM 2.7 to 9.8)	SE	No Site Summary	NA
29	Columbia American Plating	Consent Decree	Site Summary	4/26/2005
3295	Consolidated Metco	XPA	Site Summary	3/8/2005
2363	Crawford Street Corp	XPA	Site Summary	3/8/2005
877	Crosby & Overton	SI recommended	No Site Summary	NA
36	Doane Lake Study Area	Other remedial action recommended	No Site Summary	NA
111	Dura Industries	SI recommended	No Site Summary	NA
3901	End of Swan Island Lagoon	Site screening recommended	No Site Summary	NA
397	ESCO Corp. - Willbridge Landfill	SI recommended	No Site Summary	NA
4409	ESCO Landfill - Sauvie Island	PA	No Site Summary	NA
112	ESCO Plant #3	SI recommended	No Site Summary	NA
141	Evrax Oregon Steel Mills	RI	Site Summary	2/28/2007
137	ExxonMobil Oil Terminal	RD/RA	Site Summary Addendum	10/10/2005 2/28/2007
2364	Foss Maritime/Brix Marine	Source control decision	Site Summary	10/10/2005
2365	Fred Devine Diving and Salvage	Source control decision	Site Summary	4/26/2005
44	Fred Meyer - Swan Island	NFA	No Site Summary	NA
2366	Freightliner TMP	RI	Site Summary	5/31/2005
115	Freightliner TMP2 (Parts Plant)	RI	Site Summary	4/26/2005
1239	Front Avenue LP Properties	XPA	Site Summary Addendum	9/1/2005 2/28/2007
84	Gasco (NW Natural, Koppers, Pacific Northern Oil)	RI	Site Summary	2/28/2007
4003	GE Decommissioning	XPA	Site Summary	2/28/2007
2370	Georgia Pacific - Linnton (Morse Bros.)	NFA	Site Summary	3/8/2005
1840	GI Trucking	Site screening recommended	No Site Summary	NA
2378	Glacier NW	Other recommendation	No Site Summary	NA
2440	Goldendale Aluminum	NFA	Site Summary	2/28/2007
49	Gould Electronics, Inc./ NL Industries	Remedy implemented, NFA	Site Summary	9/1/2005
117	GS Roofing Products (Genstar)	Other remedial action recommended	Site Summary	4/26/2005
404	Guilds Lake	Operations & Maintenance	No Site Summary	NA
1155	Gunderson	RI	Site Summary Addendum	10/10/2005 2/28/2007

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ECSI ^a	Site	Site Status ^b	Site Summary (and Addendum)	Date of Site Summary (and Addendum) ^c
988	Hercules, Inc.	SI recommended	No Site Summary	NA
935	Industrial Battery Building	NFA	No Site Summary	NA
260	Island Holdings	NFA	No Site Summary	NA
2371	Jefferson-Smurfit	NFA	Site Summary	3/8/2005
2441	Joseph T. Ryerson & Son	Not in DEQ CUP	Site Summary	5/31/2005
1096	Kinder Morgan Linnton Terminal (GATX)	RI complete, remedial action	Site Summary	9/17/2004
2442	Kittridge Distribution Ctr.	CNFA	Site Summary	9/1/2005
2372	Lakeside Industries	XPA	Site Summary	4/26/2005
1189	Linnton Oil Fire Training Grounds	NFA	Site Summary	9/1/2005
2373	Linnton Plywood	NFA proposed	Site Summary	3/8/2005
4461	Lynden Farms	SI recommended	No Site Summary	NA
4797	Mar Com North	NFA	Site Summary	10/10/05
			Addendum	2/28/2007
2350	Mar Com South	RI	Site Summary	10/10/2005
			Addendum	2/28/2007
2352	Marine Finance Corporation (Hendren Tow Boats)	CNFA	Site Summary	9/15/2004
			Addendum	2/28/2007
134	McCall Oil	Source control decision	Site Summary	9/15/2004
74	McCormick & Baxter Creosoting	NFA	Site Summary	9/15/2004
135	McWhorter Inc.	NFA	Site Summary	4/26/2005
1390	Metro Central Transfer Station	XPA recommended	No Site Summary	NA
1307	Mogul Corp.	NFA	No Site Summary	NA
81	Mt. Hood Chemical Corp.	RA	No Site Summary	NA
1328	Mt. Hood Chemical Property	NFA	No Site Summary	NA
966	Nudelman & Son	SI recommended	No Site Summary	NA
2374	Olympic Pipeline Co.	Not in DEQ CUP	Site Summary	5/31/2005
3342	Olympic Pipeline Portland Delivery Facility	Independent Cleanup Program	Site Summary	5/31/2005
1036	Owens Corning - Linnton	Source control decision	Site Summary	3/8/2005
5055	Penske Truck Leasing - NW Yeon	NFA	No Site Summary	NA
1345	Petroleum Release - N Edgewater St.	SI recommended	No Site Summary	NA
3377	Port of Portland - Terminal 1 North	RI	Site Summary	2/28/2007
2642	Port of Portland - Terminal 1 South	CNFA	Site Summary	2/28/2007
2769	Port of Portland - Terminal 2	XPA recommended	Site Summary	2/28/2007
2356	Port of Portland - Terminal 4, Slip 1	RI	Site Summary	2/28/2007
272	Port of Portland - Terminal 4, Slip 3	RD/RA	Site Summary	2/28/2007
172	Port of Portland - Terminal 4, Toyota Auto Storage	NFA	Site Summary	2/28/2007
100	Portland Terminal Railroad Co.	Source control decision	No Site Summary	NA
2353	PGE - Harborton	Source control decision	Site Summary	5/31/2005
3976	Portland General Electric - Substation E	NFA	No Site Summary	NA
2013	Premier Edible Oils (Schnitzer Investment)	RI	Site Summary	9/15/2004
155	Rhone Poulenc (SLLI)	RI	Site Summary	2/28/2007
5307	Rivergate Industrial Park Tract O Property	Site investigation	No Site Summary	NA
2376	RK Storage and Warehousing	Not in DEQ CUP	Site Summary	9/1/2005
2437	RoMar Realty of Oregon	NFA	Site Summary	5/31/2005
2104	Santa Fe Pacific Pipeline	Not in DEQ CUP	Site Summary	9/1/2005
1347	Schmitt Forge	NFA	No Site Summary	NA
5324	Schnitzer Burgard Industrial Park	Source control decision	No Site Summary	NA
395	Schnitzer Investment - Doane Lake (Air Liquide America Corp.)	NFA under CERCLIS, XPA	Site Summary	5/31/2005
2377	Shaver Transportation	NFA	Site Summary	9/1/2005
183	Siltronics	RI, Unilateral Order	Site Summary	2/28/2007
2980	South Rivergate Industrial Park	Other remedial action recommended	Site Summary	5/31/2005
3343	JR Simplot			
4696	Ash Grove Cement			
2630	St. Helens Road Petroleum Contamination	Site screening recommended	No Site Summary	NA
1067	St. Johns - Keeler #2 Right-of-Way	Further investigation of area facilities recommended	No Site Summary	NA
1989, 5130	ST Services/Shore Terminal	Source control decision	Site Summary	9/1/2005
1235	Sulzer Bingham Pumps	XPA	Site Summary	5/31/2005
			Addendum	2/28/2007
2117	Texaco/Equilon Enterprises - Pipeline	RI	Site Summary	3/8/2005

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169	Texaco/Equilon Enterprises - Bulk Terminal	RI	Site Summary	3/8/2005
170	Time Oil	BRA	Site Summary	2/28/2007
2367	Transloader International (General Construction)	Not in DEQ CUP	Site Summary	9/1/2005
277	Triangle Park (Riedel Environmental)	RI	Site Summary	10/10/2005
1160	Trumbull Asphalt Plant	DEQ SE	Site Summary	4/26/2005
176	Union Carbide	Operations & Maintenance	No Site Summary	NA
178	UPRR Albina Yard	RI	Site Summary	2/28/2007
2017	UPRR St. Johns Tank Farm	CNFA	No Site Summary	NA
1641	USACE - Portland Moorings	FFA	Site Summary	3/8/2005
1338	U.S. Coast Guard - Marine Safety Station	Source control decision	Site Summary	4/26/2005
5109	U.S. Navy and Marine Reserve Center	SI recommended	No Site Summary	NA
330	Van Waters and Rogers	RCRA Corrective Action Implemented	Site Summary	5/31/2005
2423	V&K Service	Site screening recommended	No Site Summary	NA
333	West Coast Adhesive Co.	RA recommended	No Site Summary	NA
2066	Willamette Cove	RI	Site Summary	2/28/2007
3172	Willamette River Westside CSO Construction	Negotiations	No Site Summary	NA
1549	Willbridge Terminal	RI/FS	Site Summary Addendum	9/17/2004 2/28/2007
3395	Willbridge Switching Yard	XPA	Site Summary	2/28/2007
RM 11 to 11.8				
No ECSI #	Former Albina Engine and Machine Works Shipyard	See #3036, #5117, #5449, #5561 and #4497 below	Site Summary	11/20/2007
5328	Abandoned Tanner Creek Sewer	SI recommended	No Site Summary	NA
4590	Albers Mill	RI recommended	No Site Summary	NA
4775	Boxer NW Building	Not in DEQ CUP	No Site Summary	NA
1019	Cascade Brake Products	Not in DEQ CUP	No Site Summary	NA
5561	CDL Pacific Grain/Cargill		Site Summary	11/20/2007, with Albina site summary
2500	Courtyard Hotel	NFA	No Site Summary	NA
2313	Gender Machine Works, Inc.	CNFA	No Site Summary	NA
5449	Glacier NW	DEQ SI	No Site Summary	11/20/2007, with Albina site summary
1080	Hoyt Street Railyard (former)	RD/RA	No Site Summary	NA
1624	Hoyt Street Railyard - Pearl Court			
4960	Pearl Building			
5443	HSRY - Blocks 19,21,22,25 - The Fields	Engineering control	No Site Summary	NA
1301	Mammal Survey & Control Service	Not in DEQ CUP	No Site Summary	NA
1302	Master Chemical Inc.	NFA	No Site Summary	NA
5117	PacifiCorp Albina Riverlots	Source control decision	Site Summary	11/20/2007, with Albina site summary
5117	PacifiCorp Knott Substation	Source control decision	No Site Summary	NA
3067	RiverTec Property	Not in DEQ CUP	No Site Summary	NA
1139	Tarr Inc.	RI	No Site Summary	NA
3036	Tucker Building	CNFA	Site Summary	11/20/2007, with Albina site summary
1962	Union Station Agricultural Marketing Center Site	RD/RA	No Site Summary	NA
2407	Union Station Horse Barn	PNFA	No Site Summary	NA
1885	Union Station - Parcel B South	RD/RA	No Site Summary	NA
1414	Union Station - Track #5	CNFA	No Site Summary	NA
2183	US Postal Service Processing & Distribution Center	ROD	No Site Summary	NA
3215	Valvoline	NFA	No Site Summary	NA
2761	Vermiculite Northwest, Inc (former)	CERCLIS-led	No Site Summary	NA
4535	Waterfront Pearl Condominiums Construction Site	NFA	No Site Summary	NA
4497	Westinghouse	Cleanup occurring under TSCA	Site Summary	11/20/2007, with Albina site summary
1331	Wilbur-Ellis Co. - Portland	NFA	No Site Summary	NA
776	Williamson & Bleid	Not in DEQ CUP	No Site Summary	NA
ECSI Sites within Shared Conveyance Systems^d				
1820	ANRFS	RI recommended	No Site Summary	NA
1076	Ashland Chemical	XPA recommended	No Site Summary	NA
5059	Calbag-Nicolai	Source control decision	No Site Summary	NA
1405	Carson Oil	RI recommended	No Site Summary	NA
4784	Container Management	Source control decision	No Site Summary	NA

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ECSI ^a	Site	Site Status ^b	Site Summary (and Addendum)	Date of Site Summary (and Addendum) ^c
4015	Container Recovery	CNFA	No Site Summary	NA
4008	Front Avenue MP	NFA	No Site Summary	NA
TSCA site, no ECSI #	GE - NW 28th	Cleanup occurring under TSCA	No Site Summary	NA
4655	Greenway Recycling	CNFA	No Site Summary	NA
2406	PGE - Forest Park	Source control decision	No Site Summary	NA
5103	SFI	NFA	No Site Summary	NA
1196	Galvanizers	Source control decision	No Site Summary	NA
146	Paco Pumps	NFA	No Site Summary	NA
69	Wilhelm Trucking	Source control decision	No Site Summary	NA

Notes:

^a ECSI sites that are shown on this table but are outside the boundary shown on Map 4.2-1 include ECSI #87 (Nurnberg Scientific Co.), #1306 (Mocks Bottom Concrete and Debris Landfill), #1897 (Sylvan Cleaners), #3301 (Forest Park Drainage Tunnel), #3807 (Roadway Express). In addition, the individual terminals that are a part of Willbridge Bulk Fuel Facility (i.e., ECSI #25 - Chevron, #160 - Shell Oil, and #177 - Unocal) are not depicted on this map.

^b Obtained from <http://www.oregondeq.com/lq/ECSI/ecsiquery.asp?listtype=lis&listtitle=Environmental+Cleanup+Site%20Information+Database>

^c Information on sites with site summaries was updated on the basis of USEPA/DEQ comments on the Round 2 Report (USEPA 2008b) in November 2008. Information on sites with no site summary was obtained from the above website between December 2008 and June 2009, and updated July 2011.

^d Based on independent investigations performed in 2007-2008, as documented in Table 4.4-3.

BRA - baseline risk assessment

CERCLIS - Comprehensive Environmental Response, Compensation and Liability Act

CNFA - Conditional No Further Action

CUP - Cleanup Program

DEQ - Oregon Department of Environmental Quality

ECSI - Environmental Cleanup Site Information

FFA - Federal Facilities Agreement

FS - feasibility study

MOA - memorandum of agreement

NA - not applicable

NFA - No Further Action

PA - preliminary assessment

PNFA - Partial No Further Action

RCRA - Resource Conservation and Recovery Act

RD/RA - Record of Decision/Remedial Action

RI - remedial investigation

ROD - Record of Decision

SE - site evaluation

SI - site investigation

TSCA - Toxic Substances Control Act

XPA - expanded preliminary assessment

Table 4.2-2. Upland Site Pathway Assessment Summary.^a

Site Name	ECSI #	River Mile	River Bank	Potential Upland and Overwater Sources	Industrial Sector (Historical and Current)	Pathway Summary											
						Groundwater			Direct Discharge				Overland Transport		Riverbank Erosion		
						COIs	Pathway Status	NAPL	Stormwater		Overwater		COIs	Pathway Status	COIs	Pathway Status	
									COIs	Pathway Status	COIs	Pathway Status					
ECSI Sites within Study Area																	
ACF Industries	794	3.7	West	Former UST area, sandblasting, painting, adjacent rail tracks	Electrical Production, Metals	4,7	H-c, C-d	?	1,4,7 (Stormwater Ditch)	H-b, C-d		N/A		H-d, C-d		N/A	
Alder Creek Lumber Co.	2446	2.7	West	Wood waste leachate, private outfalls, overwater dock, potentially contaminated dredge material	Wood Products	NS	H-c, C-c	?	11	H-c, C-d		H-b, C-b	11	H-c, C-c	11	H-c, C-c	
Anderson Brothers	970	8	West	Former UST, paint spill area, historic waste disposal system	Bulk Fuel		H-d, C-d	?	1,3,4,5,6,7,9	H-a, C-d		N/A		N/A		N/A	
ARCO	1528	4.9	West	Truck-loading rack area, remanufacturing warehouse, tank farms, historical spill areas, groundwater plume, seepage from interceptor well and seawall, dock operations	Bulk Fuel, Shipbuilding, Wood Products	1,3,4,7	H-a, C-b	Y	1,3,4,7	H-b, C-c	3,4,7	H-a, C-a		N/A		N/A	
Arkema	398	7.3	West	Former unlined MPR pond and trench, historic discharge through pipe, unpaved areas with contaminated soils, historic spill areas, stormwater outfalls, contaminated groundwater plume	Chemical Manufacturing	1,2,5,7,10	H-a, C-a	Y	5	H-a, C ^b -a	4,10	H-a, C-d	NS	H-c, C-d	5,7,10	H-a, C-a	
Babcock Land Co.	2361	4.4	West	Foundry sand, historic dock operations	Wood Products	NS	H-c, C-c	?	NS	H-c, C-c	NS	H-c, C-d	NS	H-c, C-c	NS	H-c, C-c	
Burgard Ind. Park - Boydston Metals, Portland Blast Media	2362	4.1	East	Oil storage area, contaminated soils, stormwater outfall, unknown source	Metals, Shipbuilding	1	H-c, C-c	N	3,6,7	H-c, C-c		N/A		N/A		H-d, C-d	
Burgard Ind. Park - Noncontiguous Properties	N/A	4.1	East	Former shipyard sewer and stormwater discharges, groundwater contamination on NW Pipe leased property (2)	Metals, Shipbuilding	1,2,4	H-c, C-c	N	11	H-c, C-c		N/A	NS	H-c, C-c	NS	H-c, C-c	
Burgard Ind. Park - NW Pipe	138	4	East	ASTs and 55-gallon drums, pipe lining and coating building, transformer storage area, asphalt dipper tank, industrial well, dust suppressant use, alleged solvent and petroleum dumping areas, catch basins and storm drains	Metals, Shipbuilding	1,3,4	H-c, C-d	N	1,3,4,6,7	H-b, C-b ^c		N/A		N/A		N/A	
Burgard Ind. Park - Portland Container Repair	2375	4	East	PCE groundwater contamination (source unknown), PCB-contaminated soil (since removed), fuel truck parking area, wash pad area	Metals, Shipbuilding	1	H-c, C-c	N	4(?)	H-c, C-c		N/A		N/A		N/A	
Burgard Ind. Park - Schnitzer Steel, Calbag Metals	2355	4	East	Former NW Oil Co. tanks, former sanitary sewer and stormwater discharges, former shipyard shipways, ASR on ground surface, storm drains and outfalls, over-water activities	Bulk Fuel, Metals, Commodities, Shipbuilding	1,4,7	H-a, C-c	N	1,4,6,7	H-a, C-b ^c	1,3,4,7	H-a, C-a	NS	H-c, C-c	3,4,6,7	H-c, C-c	
Calbag Metals - Front Ave.	2454	8.5	West	Metal recycling operations, incinerator ash, stormwater runoff to Outfall 19	Metals		H-d, C-d	N	6,7,9	H-a, C-a ^c		N/A		N/A		N/A	
Cascade General (Portland Shipyard /Vigor Industrial) (OU1)	271	8.5	East	Paint shed and blast booth area; BWTP; Buildings 43,50, and 80 areas; Building 73, 4, and 58; WSI storage area; substations; USTs; N. Channel Ave. fabrication site; drydocks and berths	Metals, Shipbuilding, Wood Products	1,7	H-c, C-c	N	1,3,4,6,7,8,9	H-b, C-a ^{c,b}	3,4,7,8,9	H-a, C-a	NS	H-c, C-c	NS	H-c, C-c	
Chase Bag	2424	9.2	West	Subsurface groundwater VOC plume, former UST, observed leaking drums along east and south boundaries, observed pool of petroleum substance	Chemical Manufacturing	1	H-c, C-c	?	1,2,7	H-c, C-c		N/A		N/A		N/A	
Chevron Asphalt Refinery	1281	8	West	Historic spills and boilovers	Asphalt	3,4,7	H-c, C-d	Y	3,4,7	H-a, C-d ^{c,1}		N/A		N/A		N/A	
Christenson Oil	2426	8.8	West	Historic spills, stormwater conveyance, unnamed creek	Bulk Fuel	NS (1) ^d	H-c, C-c	?	1,3,4,7	H-a, C-c ^c		N/A		N/A		N/A	
City of Portland - BES WPCL	2452	6.1	East	Historic operations (lumber mill, fruit box manufacturing), fill and debris material, subsurface electrical conduit, historic lumber mill deck. Currently, WPCL.	Wood Products	11	H-c, C-d	N	11	H-c, C-d	NS	H-c, C-d	4,7	H-c, C-d	NS	H-c, C-d	

Table 4.2-2. Upland Site Pathway Assessment Summary.^a

Site Name	ECSI #	River Mile	River Bank	Potential Upland and Overwater Sources	Industrial Sector (Historical and Current)	Pathway Summary										
						Groundwater			Direct Discharge				Overland Transport		Riverbank Erosion	
						COIs	Pathway Status	NAPL	Stormwater		Overwater		COIs	Pathway Status	COIs	Pathway Status
									COIs	Pathway Status	COIs	Pathway Status				
City of Portland Outfalls	2425	2.7 to 9.8	East/ West	Stormwater and/or combined sewer outfalls draining multiple properties	NA				Detailed Information provided for Specific Outfalls in Table 4.4-1	H-a ⁱ , C-a ⁱ						
Columbia American Plating	29	9.5	West	Metal plating operations, spills and releases	Metals	1,2,7,10	H-c, C-d	N	1,2,3,6,7,9,10	H-a, C-a		N/A		N/A		N/A
Consolidated Metco	3295	2.8	East	PAH-contaminated fill material, cutting fluid spills, catch basins and storm drains	Steel Manufacturing	3,4	H-c, C-c	N	3,4,6,7,9	H-b, C-a ^{c,1}		N/A		N/A		N/A
Crawford Street Corp.	2363	6.5	East	Historic and current manufacturing operations, historic and current site runoff, sandblast fill material, former UST, electrical transformer, railroad right-of-way, historic dock operations, historic private outfalls, beach metal debris	Steel Manufacturing, Wood Products	11	H-c, C-d	N	1,3,4,6,7	H-b, C-c	1,3,4,7	H-b, C-d	1,3,4,6,7	H-b, C-c	1,3,4,6,7,9	H-b, C-c
ESCO Landfill - Sauvie Island	4409	2.6	West	Repository of non-hazardous waste from ESCO steel foundries. Permitted solid wastes include bag house dust, refractory bricks, and spent mold sands (zircon-rich and other suitable sands)	Steel Manufacturing	7,9,10	H-c, C-c	N	NS	H-c, C-c ^e		N/A		N/A		N/A
Evraz Oregon Steel Mills	141	2.4	East	Former Ramsey Lake sump, riverbank fill area, stormwater collection system, historic overwater spills from oil sump transfers	Steel Manufacturing	4	H-c, C-d	Y (H)	3,4,6,7	H-a, C ^{b,c,g} -c	1,2,4	H-a, C-d		N/A	6,7	H-a, C-a
						7	H-c, C-c	N								
ExxonMobil Oil Terminal	137	5	West	North and Center tank farms, fuel loading rack, over-water fuel transfer spills	Bulk Fuel	1,3,4,7	H-a, C-b	Y	1,3,4,7	H-b, C-c ^e	1,3,4	H-a, C-a		H-d, C-d		H-c, C-d
Foss Maritime/Brix Maritime	2364	5.7	West	Former gasoline and lube oil UST and pipelines, former gasoline dispenser area, former 30-weight oil pipeline area, current lube oil and diesel UST and pipelines, catch basins, transformers, overwater activities (vessel servicing and emissions)	Bulk Fuel	1,3,4,7	H-b, C-d	N	1,3,4	H-c, C-d	1,2,3,4,7	H-a, C-a	NS	H-c, C-d	NS	H-c, C-c
Fred Devine Diving and Salvage	2365	8.4	East	Maintenance operations, former USTs, ASTs, PGE transformers, catch basins, overwater spills, vessel emissions, storage area NE of warehouse	Other	NS	H-c, C-d	?	2,3,4,7,9	H-b, C-d	4	H-a, C-b	4,7,8,9	H-c, C-d	NS	H-c, C-d
Freightliner TMP	2366	8.5	East	Former USTs, former wheel paint booth, stormwater discharges	Other	1,2,4	H-c, C-c	Y?	3,6,7	H-b, C-c ^e		N/A		N/A		N/A
Freightliner TMP2 (Parts Plant)	115	9.3	East	Former UST, former wet filter paint booths, stormwater discharges	Metals	1,2,4	H-c, C-c	Y?	7	H-b, C-c ^e		N/A		N/A		N/A
Front Avenue LP Properties (CMI NW, Hampton, Lonestar NW/Glacier NW, Tube Forging)	1239	8.3	West	Slag fill material, Parcels 1, 2, and 3 former and current operations, caustic-lube oil and graphic lube oil discharges to storm drain, overwater activities	Metals	1,2,3,4,6,7	H-c, C-c	N	1,2,3,4,6,7,9	H-b, C-c ^e	4	H-b, C-b	1,2,3,4,7	H-c, C-d	7	H-c C-c
Gasco (NW Natural, Koppers, Pacific Northern Oil)	84, 2348	6.5	West	Former retort area, former tar processing area, former light oil plant Kopper Co. Plan/Current KI tank farm, former naphthalene plant, former coke oven area, former pitch plant/tar loading area, former tar settling ponds, former Kopper Co./Current KI pencil pitch storage area	Bulk Fuel, Manufactured Gas, Commodities	1 ^e ,2 ^f ,3,4,7,10	H-a, C-a	Y	1 ^e ,2 ^f ,3,4,7,10	H-a, C ^b -a	3,4	H-a, C-b	1 ^e ,2 ^f ,3,4,7,10	H-a, C-b	1 ^e ,2 ^f ,3,4,7	H-a, C-a
GE Decommissioning	4003	9.5	West	Former equipment handling and pressure washing areas, report of subsurface oil in storage yard, former transformer pit outlet drain, catch basins and storm drains	Electrical Production	4,6,7	H-c, C-c	N	3,4,6,7	H-a, C-a ^l		N/A		N/A		N/A
Georgia Pacific - Linnton	2370	3.6	West	Gasoline UST and soil remediation pile, ASTs, former ACF site, former wood-treating plant, former Linnton Oil fire training grounds, dock and former overwater fueling	Bulk Fuel, Commodities, Wood Products	1,3	H-c, C-d	N	1,3,4	H-c, C-d	NS	H-b, C-b		H-d, C-d	NS	H-c, C-c

Table 4.2-2. Upland Site Pathway Assessment Summary.^a

Site Name	ECSI #	River Mile	River Bank	Potential Upland and Overwater Sources	Industrial Sector (Historical and Current)	Pathway Summary										
						Groundwater			Direct Discharge				Overland Transport		Riverbank Erosion	
						COIs	Pathway Status	NAPL	Stormwater		Overwater		COIs	Pathway Status	COIs	Pathway Status
									COIs	Pathway Status	COIs	Pathway Status				
Goldendale Aluminum	2440	10	East	Former alumina and pitch handling operations, ASTs, former USTs, storage buildings, transformers, outfalls, overland runoff areas, historic grain shipment facility, dock operations and spills	Commodities		H-d, C-d	N	3,4,7	H-b, C-d ^e	3,4,7	H-a, C-b	1,2,3,4,7	H-c, C-d		N/A
Gould Electronics/NL Industries	49	7.2	West	Former smelter and other site operations, historical landfilling operations, surface and subsurface soil contamination, former East Doane Lake sediment, current onsite containment facility	Steel Manufacturing, Metals		H-d, C-d	N	1,3,5,7,10	H-a, C-d ^l		N/A		N/A		N/A
GS Roofing	117	7.5	West	Facility operations, former USTs, storm sewer catch basins/drains, and overwater separators, former wastewater discharge, landfilled materials, railroad spur, finished products storage area	Asphalt	1,2,4,7	H-c, C-c	Y(H)	1,3,4,7	H-b, C-c ^b		N/A	NS	H-c, C-c	NS	H-c, C-c
Gunderson	1155	8.8	West	Former TCA tank, marine paint and blast areas, launchways, former salvage yard, hazardous materials storage areas, marine barge launchways, railcar storage on outfitting dock, fill material in Area 3	Metals, Shipbuilding	1,3,4,7	H-a, C-a	N	4,6,7,8,9	H-a, C-a	1,7	H-a, C-b	1,3,6,7	H-a, C-a	1,3,6,7	H-b, C-a
Jefferson Smurfit	2371	4	East	Former fuel ASTs and USTs, stormwater outfalls	Wood Products		H-d, C-d	?	4,7	H-c, C-d ^e		N/A		N/A		N/A
Kinder Morgan Linnton Terminal (GATX)	1096	4.1	West	Petroleum fuel storage areas, dock operations	Bulk Fuel	1,3,4,7	H-a, C-b	Y	1,3,4,7	H-c, C ^{b,c}	1,2,4	H-a, C-a		H-d, C-d	NS	H-c, C-c
Kittridge Distribution Center	2442	8.4	West	Historic acetylene plant and lime recovery	Metals		H-d, C-d	N	1,4,6,7,10	H-a, C-d		N/A		H-c-C-d		N/A
Lakeside Industries	2372	8.5	West	Former dry wells, Gunderson VOC groundwater plume, dock operations	Bulk Fuel	1	H-c, C-c	N	NS	H-c, C-c		H-a, C-b	NS	H-c, C-d	NS	H-c, C-d
Linnton Oil Fire Training Grounds	1189	3.5	West	Residual contaminated soil pockets (remaining after remediation), historical main training area, upper and lower ponds, historical north drainage system (direct discharge to river)	Electrical Production		H-d, C-d	N	3,10	H-a, C-d		N/A		H-d, C-d		N/A
Linnton Plywood (Columbia River Sand and Gravel)	2373, 2351	4.7	West	Eroded bank at maintenance shop area; private outfalls, tug and barge operations at CRSG and historic log operations	Wood Products	4,7,9	H-c, C-d	N	1,2,3,4,6,7,9	H-b, C ^{b,c} -d	4,7	H-a, C-b	3,4,6,7	H-b, C-d	4,7	H-c, C-d
Mar Com - North Parcel	4797	5.6	East	Stained soils, sandblast grit piles, contaminated riverbank soil	Metals, Shipbuilding		H-d, C-d	N		H-d, C-d		N/A	4,6,7	H-b, C-d	1,2,3,4,7,8,9	H-c, C-d
Mar Com - South Parcel	2350	5.6	East	Former sawmill, Building C, steel fabrication building, former warehouse, machine shop, compressor shed, paint booth, contaminated soil in knoll and SW corner	Wood Products, Shipbuilding	1,2,3,4,7,8,10	H-c, C-d	N	1,2,3,4,6,7,8,9	H-b, C-d ^e	1,2,3,4,7,8,9	H-a, C-d	1,2,3,4,6,7,8,9	H-b, C-d	1,2,3,4,7,8,9	H-b, C-c
Marine Finance (Hendren Tow Boats)	2352	5.8	West	Former metal salvage operation, former USTs, former drum storage area, former warehouse, pooled water below storm drain, overwater dock, stormwater pipe, barge/tug moorage	Metals, Shipbuilding		H-d, C-d	N	1,3,4,7,8	H-b, C-d	1,2,3,4,7	H-a, C-b	1,3,4,7,8	H-b, C-d	1,2,3,4,7,8,10	H-b, C-d
McCall Oil	134	7.9	West	Bulk fuel storage, marine fuel transfers, rail fuel transfers, former CCA and solvent storage, drum storage, underground pipeline corridor, catch basins, upgradient facilities (Chevron, TFA), dock operations	Chemical Manufacturing, Bulk Fuel	1,2,3,4,7	H-c, C-d	Y	1,2,3,4,6,7,9	H-b, C-c	1,2,3,4	H-a, C-a		H-d, C-c	2,3,7	H-c, C-c
McCormick & Baxter Creosoting	74	7	East	Former onsite waste disposal area, former central processing area, former tank farm area, former small waste disposal areas and trench, former dock operations	Wood Products	3,7,10	H-a, C-d	Y	3,7,10	H-a, C-d	3,7,10	H-a, C-d	3,7,10	H-a, C-d	3,7,10	H-a, C-d
McWhorter Inc.	135	8.8	West	Historic spills or releases from tanks and pipelines, former creek	Chemical Manufacturing	NS (1,3,4) ^d	H-c, C-d	?	1,2,3,4,9	H-a, C-c		N/A		N/A		N/A

Table 4.2-2. Upland Site Pathway Assessment Summary.^a

Site Name	ECSI #	River Mile	River Bank	Potential Upland and Overwater Sources	Industrial Sector (Historical and Current)	Pathway Summary										
						Groundwater			Direct Discharge				Overland Transport		Riverbank Erosion	
						COIs	Pathway Status	NAPL	Stormwater		Overwater		COIs	Pathway Status	COIs	Pathway Status
									COIs	Pathway Status	COIs	Pathway Status				
Metro Central Transfer Station	1398	7.2	West	Former steel warehouses, household hazardous waste drop-off site	Steel Manufacturing	1,5,7	H-c, C-c	?	1,2,5,6,7,10	H-c, C-a ^l		N/A		N/A		N/A
Mt. Hood Chemical Corp.	81	8.5	West	Former commercial cleaning product packaging and distribution, chlorinated VOC plume	Chemical Manufacturing	1	H-c, C-c	?	1	H-c, C-c ^l		N/A		N/A		N/A
Olympic Pipeline	2374	3.5-7.9	West	Pipeline pump station (area of 1995 spill), AST farm, soil stockpile area, injection pump area	Bulk Fuel	1,3,4,7	H-c, C-d	N	11	H-c, C-c		N/A		N/A		N/A
Owens Corning - Linnton	1036	3.8	West	Historic releases in pole barn storage area, former wood-processing area, former UST, process area releases in northern portion, historic releases during product unloading at dock	Bulk Fuel, Wood Products		H-d, C-d	N	11	H-c, C-c ^c	3,4	H-b, C-d	3,4	H-c, C-d	3,4	H-c, C-d
PGE Substation E	3976	10.4	West	Former UST	Electrical Production	NS	H-c, C-d	?	H-c, C-d	N/A		N/A		N/A		N/A
POP - Terminal 1 South (Riverscape)	2642	11	West	B-5 area, B-37 (dry well area), B-38 area, B-102 area, B-3, B-11, B-97, berths	Commodities		H-c, C-d	N	11	H-c, C-d	NS	H-b, C-d		N/A	NS	H-c, C-d
POP - Terminal 1 North	3377	10.6	West	Suspected former UST, former wood-filled ravine, soil beneath Warehouse No. 101	Commodities, Shipbuilding, Wood Products	1,3,4,7	H-c, C-d	N	11	H-c, C-c	NS	H-b, C-d		N/A		H-d, C-d
POP - Terminal 2	2769	10	West	Gearlocker, former Buildings 3060 and 3070, former USTs, berths 201, 202, and 203	Commodities, Shipbuilding, Wood Products		H-d, C-d	N	3,4	H-c, C-c	NS	H-a, C-a		N/A	NS	H-c, C-d
POP - Terminal 4, Auto Storage	172	4.8 to 5.6	East	Completely paved storage yard	Commodities		H-d, C-d	N	11	H-c, C-d ^c		H-d, C-b		N/A		H-d, C-d
POP - Terminal 4, Slip 1	2356	4.3	East	Railroad tracks in western portion of OU1, former paint storage area in OU2, riverbank of Wheeler Bay	Bulk Fuel, Commodities		H-d, C-d	N	3,4,5,6,7,9	H-b, C-c	3,10	H-a, C-b		H-d, C-d	3,7	H-a, C-d
POP - Terminal 4, Slip 3	272	4.7	East	East end of Slip 3, pencil pitch in limited area of riverbank and Slip 3 bank	Bulk Fuel, Commodities	3,4	H-a, C-d	Y	3,5,7,9	H-a, C-a	3,4	H-a, C-d		H-d, C-d	3	H-a, C-a
Portland General Electric - Harborton	2353	3.3	West	Pockets of subsurface contaminated soils near monitoring wells	Electrical Production, Bulk Fuel		H-d, C-d	N		H-d, C-d		N/A		N/A	?	H-d, C-d
Portland Terminal Railroad Co. (aka Guilds Lake)	100	9.5	West	Railroad switching yard	Rail Yard	1,2,3,4,6,7,9	H-c, C-d	?	1,2,3,4,6,7,9	H-c, C-c		NA		NA		NA
Premier Edible Oils	2013	3.6	East	Near-surface and smear zone contaminated soil in the following areas: 1) former NW Oil Company tank farm, 2) southern shoreline, 3) vicinity of former PEO diesel USTs, 4) WWTP, 5) former process buildings and truck-loading area; historic outfalls	Chemical Manufacturing, Bulk Fuel, Commodities	1,2,3,4,7,9	H-c, C-a	Y	1,3,4,7	H-a, C-a	4,7	H-a, C-d	1,3,4	H-b, C-c	1,3,4	H-b, C-c
Rhone Poulenc (Starlink)	155	7.2	West	Former insecticide and herbicide areas, former lake area, former East Doane Lake	Chemical Manufacturing	1,5	H-a, C-a	Y	1,2,5,7,10	H-a, C-d ^{b,l}		N/A		N/A		N/A
RK Storage and Warehousing	2376	4.5	West	Former UST, former stockpiled oily sludge, former stockpiled sandblast grit	Wood Products, Chemical Manufacturing		H-d, C-d	N	NS	H-c, C-d	NS	H-a, C-d	NS	H-c, C-c	NS	H-c, C-c
RoMarRealty of Oregon	2437	3.8	East	Historic releases from stored scrap metal equipment and parts	Commodities, Wood Products		H-d, C-d	N	4,6,7	H-c, C-d		N/A		N/A		N/A
Ryerson and Son	2441	4.1	East	Historic stormwater trench to slip, USTs	Metals	NS	H-c, C-c	N	NS	H-c, C-c		N/A		N/A		N/A

Table 4.2-2. Upland Site Pathway Assessment Summary.^a

Site Name	ECSI #	River Mile	River Bank	Potential Upland and Overwater Sources	Industrial Sector (Historical and Current)	Pathway Summary										
						Groundwater			Direct Discharge				Overland Transport		Riverbank Erosion	
						COIs	Pathway Status	NAPL	Stormwater		Overwater		COIs	Pathway Status	COIs	Pathway Status
									COIs	Pathway Status	COIs	Pathway Status				
Santa Fe Pacific Pipeline	2104	7	West	Containment area at the SFPP site	Bulk Fuel		H-d, C-d	Y		H-d, C-d		N/A		N/A		N/A
Schnitzer Investment - Doane Lake (Air Liquide)	395	7.3	West	Former discharge of calcium hydroxide into Doane Lake, former acetone UST, unknown source of subsurface contamination, compressor oil spill	Metals	6,7,10	H-c, C-c	N	1,2,6,7,10	H-a, C-a ¹		N/A		N/A		N/A
Shaver Transportation	2377	8.4	West	Diesel fuel AST, former diesel fuel USTs, storage building, overwater activities	Bulk Fuel		H-d, C-d	N		H-d, C-d	4	H-a, C-a		H-d, C-d		H-d, C-d
Siltronic	183, 84, 155	6.6	West	Gasco disposal ponds and adjacent lowland areas, Gasco disposal piles, potential Gasco waste product fill (WWTP area and Fab 1 and parking lot), potential disposal area, Koppers via north drainage ditch and City Outfall 22C, former Western Transportation tanks, Olympic pipeline, TCE release and associated plume	Manufactured Gas	1,2,3,4,7,10	H-a, C-a	Y	1,2,3,4,7,9,10	H-b, C ^{b,c} -a	3,4	H-b, C-d	1 ^h ,2,3,4,7, 10	H-b, C-d	2,3,4,7,10	H-b, C-c
South Rivergate Ind. Park	2980	2.5 to 3.4	East	JR Simplot: warehouse storage and transfer of urea, truck storage and transfer of anhydrous ammonia, tank storage and transfer of diesel fuel, overwater transfer of urea, anhydrous ammonia, and diesel fuel. Ash Grove Cement: storage tanks and manufacturing	Commodities	NS	H-c, C-c	N	10	H-c, C ^b -c	10	H-a, C-a	NS	H-c, C-c	NS	H-c, C-c
ST Services/Shore Terminal (aka NuStar and Valero)	1989, 5130	5.4	West	Terminal tank farm, dock operations	Bulk Fuel	1,3,4	H-c, C-d	N	11	H-c, C-d	NS	H-a, C-a	NS	H-c, C-c	NS	H-c, C-d
Sulzer Bingham Pumps	1235	10.3	West	Former and existing USTs, historic sandblasting areas, hazardous waste storage area (including radioisotopes), electrical substations, historic welding and machine operations on piers, metal slag along riverbank	Metals, Steel Manufacturing, Shipbuilding	1,3,4,7,9,10	H-c, C-c	?	3,4,7	H-a, C-c	7	H-b, C-b	6	H-c, C-d	7	H-b, C-c
Swan Island Upland Facility (OU2)	271	8.4	East	Impacts to soil/riverbank from historical operations such as electrical substations, module fabrication/painting, and sandblast grit storage	Shipbuilding	1,3,7	H-c, C-c	N	3,4,7,9	H-c, C-c		N/A	NS	H-c, C-c	NS	H-c, C-c
Swan Island Upland Facility (OU3)	271	8.4	East	No current or historical sources are known to be present on the facility (which is almost entirely paved with asphalt-concrete)	Shipbuilding	NS	H-c, C-c	N	3,6,7,9	H-b, C-c ^b		N/A	NS	H-c, C-c	NS	H-c, C-c
Texaco/Equilon - Bulk Terminal	169	8.8	West	Pipe containment, ASTs, foundry sand, historic wooden flume and utilities (possibly a preferential GW pathway)	Bulk Fuel	1,3,4	H-c, C-c	Y	1,3,4,7	H-c, C-c ¹		N/A		N/A		N/A
Texaco/Equilon - Pipeline	2117	8.8	West	Dock and overwater fueling activities	Bulk Fuel	1,3,4	H-c, C-c	Y	1,3,4	H-c, C-d	1,3,4	H-a, C-d	NS	H-c, C-d	NS	H-c, C-d
Time Oil	170	3.5	East	Former wood treatment formulation and storage area, former Main Terminal tank farm, former Bell Terminal tank farm, dock operations	Bulk Fuel	1,2,3,4,7,10	H-c, C-d	Y	3,4,7,10	H-a, C-d ^c	NS	H-b, C-d	1,3,4,7,10	H-c, C-d	3,7	H-c, C-d
Transloader International	2367	5.6	West	Dolphin and floating walkway, outfall (ownership unknown)	Wood Products	NS (3,4) ^d	H-c, C-c	?	NS	H-c, C-d	NS	N/A	NS	H-c, C-c	NS	H-c, C-c
Triangle Park (Riedel Env.)	277	7.4	East	Former lumber mills, wood processing, rail car servicing, oil and fuel storage, former concrete plant, former sludge disposal pond, former ASTs and USTs, former power plant, possible underground fuel storage vault, former chemical storage areas, oil spill	Shipbuilding, Wood Products, Electrical Production	1,2,3,4,5,6,7,9, 10	H-c, C-a	N	1,2,3,4,5,6,7,10	H-b, C-a	3,4	H-b, C-d	1,2,3,4,5,6,7,10	H-b, C-a	1,2,3,4,5,6,7,10	H-b, C-a
Trumbull Asphalt Plant (Owens Corning Fiberglass)	1160	9.1	West	Asphalt tank farm, roofing production line (historic wastewater discharge to Outfall 18), boiler lines and fuel tank, fume line	Asphalt	1,4	H-c, C-c	Y	3,6,7,9	H-b, C-c		N/A		N/A		N/A
Union Carbide	176	4	East	Former calcium carbide and ferroalloy processing facility, electrical substation, portion of stormwater runoff directed to Willamette	Metals, Steel Manufacturing		N/A		1,3,4,5,6,7,9,10	H-c, C-c		N/A		N/A		N/A

Table 4.2-2. Upland Site Pathway Assessment Summary.^a

Site Name	ECSI #	River Mile	River Bank	Potential Upland and Overwater Sources	Industrial Sector (Historical and Current)	Pathway Summary										
						Groundwater			Direct Discharge				Overland Transport		Riverbank Erosion	
						COIs	Pathway Status	NAPL	Stormwater		Overwater		COIs	Pathway Status	COIs	Pathway Status
									COIs	Pathway Status	COIs	Pathway Status				
UPRR Albina Yard	178	10 to 11	East	Existing and former fueling areas, locomotive washing area, wastewater treatment plant, freight car repair shop (former paint stripper area, former UST)	Rail Yard	2,3,4,7,9	H-c, C-d	N	2,3,4,6,7,9	H-a, C-a	NS	H-b, C-d		H-d, C-d	6	H-c, C-d
UPRR St. Johns Tank Farm	2017	4.6	East	Petroleum-contaminated soil	Rail Yard	3,4,7	H-c, C-d	N	3,4,7	H-c, C-d		N/A		N/A		N/A
US Coast Guard - Marine Safety Station	1338	8	East	Dock and overwater maintenance operations, fuel storage and buried product lines, garage, buoy storage yard, former drum storage area, Mt. Jefferson building, catch basins	Wood Products		H-d, C-d	N	3,7	H-b, C-c ^e	1,2,3,4,7	H-b, C-a	NS	H-c, C-d	NS	H-c, C-d
USACE - Portland Moorings	1641	6	West	Former sandblasting area, oil-stained soil at west end of property, historic sunken barge	Shipbuilding	1,3,7,10	H-c, C-c	?	3,4,7,8	H-c, C-c	4	H-a, C-a	3,4,7,8	H-c, C-c	NS	H-c, C-c
U.S. Navy and Marine Reserve Center	5109	8.2	West	UST cleanup site	Other	NS	H-c, C-c	?	4	H-c, C-c		N/A		N/A		N/A
Van Waters and Rogers (Univar)	330	8.9	West	Former recycling area, loading dock area, spill areas	Chemical Manufacturing	1	H-d, C-c	Y	1,4,5,7	H-c, C-c ^{b,l}		N/A		N/A		N/A
Willamette Cove	2066	6.8	East	Spills and historic waste disposal practices on the west, central, and east parcels, slag and beach debris, contaminated groundwater and seeps, riverbank soil, historic drydock activities	Shipbuilding, Wood Products	1,3,4,7	H-c, C-c	N	NS	H-b, C-d	NS	H-b, C-d	NS	H-c, C-c	3,6,7	H-b, C-c
Willbridge Bulk Fuel Facility (Kinder Morgan, Chevron, ConocoPhilips)	1549	7.5	West	ConocoPhillips, Chevron, and Kinder Morgan bulk terminals and dock operations	Bulk Fuel	1,3,4,7,9	H-a, C-b	Y	1,3,4,5,7,9	H-b, C-b ^{c,l}	1,3,4,7	H-a, C-a	NS	H-c, C-c	3,5,7	H-b, C-c
Willbridge Switching Yard	3395	8	West	Railroad switching yard; train assembly and breakdown only. No fueling or railcar locomotive maintenance. One 300-gallon AST removed.	Rail Yard		H-d, C-d	N	7	H-d, C-d		N/A		N/A		N/A
ECSI Sites between RM 11-11.8																
CDL Pacific Grain/Cargill	5561	11.4E	East	Grain exporting terminal	Commodities	NS	H-c, C-c	?	NS	H-c, C-c	NS	H-c, C-a	NS	H-c, C-c	NS	H-c, C-c
Glacier NW	5449	11.3E	E	Historical shipyard. Currently, aggregate loading and unloading.	Commodities, Shipbuilding	NS	H-c, C-c	?	NS	H-c, C-c	NS	H-c, C-b	NS	H-c, C-c	NS	H-c, C-c
Ross Island/KF Jacobson	TBD	11.1E	East	Sand and gravel loading and unloading	Commodities	NS	H-c, C-c	?	NS	H-c, C-c	NS	H-c, C-b	NS	H-c, C-c	NS	H-c, C-c
Tucker Building	3036	11.3	East	Former electrical transformer and other equipment repair facility. Served as PP&L's district office, storage, and warehouse space	Electrical Production	1,3,4,7	H-c, C-c	N	3,4,6,7	H-b, C-d		N/A		N/A		N/A
Westinghouse	4497	11.5	East	Former electrical transformer repair facility	Electrical Production		H-c, C-c	?	6	H-b, C-d		N/A		N/A		N/A
PacifiCorp Albina Riverlots	5117	11.3 to 11.5	East	Former shipyard and machine works property, former electrical transformer storage	Electrical Production, Shipbuilding		H-c, C-c	?	4,6	H-b, C-b ^l		N/A		N/A		N/A
PacifiCorp Knott Substation	5117	11.4	E	Active substation	Electrical Production	NS	H-c, C-c	?	11	H-c, C-c		N/A		N/A		N/A
Vermiculite Northwest, Inc. (former)	2761	11.2	East	Former vermiculite processing/handling area, possibly containing asbestos	Other	NS	H-c, C-c	?	NS	H-c, C-c		N/A		N/A		N/A

Table 4.2-2. Upland Site Pathway Assessment Summary.^a

Site Name	ECSI #	River Mile	River Bank	Potential Upland and Overwater Sources	Industrial Sector (Historical and Current)	Pathway Summary										
						Groundwater			Direct Discharge				Overland Transport		Riverbank Erosion	
						COIs	Pathway Status	NAPL	Stormwater		Overwater		COIs	Pathway Status	COIs	Pathway Status
									COIs	Pathway Status	COIs	Pathway Status				
Boxer NW Building	4775	11.8	West	Former heating oil tank (now filled), diesel soil contamination	Other	NS (4) ^d	H-c, C-c	?		H-d, C-d		N/A		N/A		N/A
Albers Mill	4590	11.6	West	Possible contaminated fill material (Liberty Ship debris); former fuel oil storage tank (now filled) and associated contaminated soil; six former USTs (removed) and associated soil contamination, historic docks	Commodities	3,4,7	H-c, C-c	?	3,4,7	H-c, C-d	3,4,7	H-c, C-d	7	H-c, C-c	7	H-c, C-c
Waterfront Pearl Condominiums Construction Site	4535	11.7	West	Historic flour mill, contaminated fill material (Liberty Ship debris), contaminated subsurface soil (74,000 tons removed), former overwater activities	Commodities	7	H-c, C-d	?	3,4,7	H-c, C-d	3,4,7	H-c, C-d	7	H-c, C-d	7	H-c, C-d
Hoyt Street Railroad (former) Hoyt Street Railroad - Pearl Court Pearl Building	1080 1624 4960	11.6	West	Former railyard and fueling facilities, former ASTs and USTs	Rail Yard		H-d, C-d	Y(H)		H-d, C-d		N/A		N/A		N/A
US Postal Service Processing & Distribution Center	2183	11.7	West	Former railyard and fueling facilities, former ASTs and USTs	Rail Yard, Bulk Fuel, Manufactured Gas	1,3,4,7	H-c, C-d	?	1,3,4,7	H-c, C-d		N/A		N/A		N/A
Union Station - Track #5	1414	11.6	West	Former train diesel refueling area	Rail Yard, Bulk Fuel		H-d, C-d	N	3,4	H-c, C-d		N/A		N/A		N/A
Union Station Agricultural Marketing Center Site	1962	11.6	West	Former rail yard, contaminated dredge fill	Rail Yard		H-d, C-d	N	3,4,7	H-c, C-d		N/A		N/A		N/A
Union Station - Parcel B South	1885	11.6	West	Rail yard and rail station, contaminated dredge fill	Rail Yard		H-d, C-d	N	3,4,7	H-c, C-d		N/A		N/A		N/A
Union Station Horse Barn	2407	11.6	West	Former rail yard, manufactured gas plant (south)	Rail Yard, Manufactured Gas	1,3,4	H-c, C-d	N	3,4,7	H-c, C-d		N/A		N/A		N/A
Gender Machine Works, Inc.	2313	11.4	West	Former foundry and machine shop, soil contamination	Steel Manufacturing		H-d, C-d	N	3,4,7	H-c, C-c		N/A		N/A		N/A
Cascade Brake Products	1019	11.3	East	Potential improper disposal of solvent and waste brake fluid	Other	NS	H-c, C-c	?	NS	H-c, C-c		N/A		N/A		N/A
Master Chemical Inc.	1302	11.5	East	Chemical manufacturing facility	Chemical Manufacturing		H-d, C-d	N		H-d, C-d		N/A		N/A		N/A
Valvoline	3215	11.2	East	Former foundry, bulk fuel tank spills and associated contaminated soil (removed)	Metals	NS	H-c, C-d	?	1,3,4,7	H-c, C-d		N/A		N/A		N/A
Williamson & Bleid	776	11.5	East	Hazardous waste generator, improper storage and disposal	Other	NS (1,4) ^d	H-c, C-c	?	NS	H-c, C-c		N/A		N/A		N/A
Wilbur-Ellis Co. - Portland	1331	11.6	West	Former warehouse and distribution center for agricultural chemicals and fertilizer, some pesticide formulation	Chemical Manufacturing	NS (4) ^d	H-c, C-d	?	1,2,3,4,5,6,7	H-c, C-d		N/A		N/A		N/A
Mammal Survey & Control Service	1301	11.6	East	Former pesticide manufacturing facility	Chemical Manufacturing	NS	H-c, C-c	?	NS	H-c, C-d		N/A		N/A		N/A
Tarr Inc.	1139	11.3	East	Bulk fuel and chemical storage, former USTs (decommissioned) and associated soil contamination (4,000 yd ³ removed), oil spill on nearby gravel lot, possible dry well	Bulk Fuel	1,3,4	H-c, C-c	?	1,3,4	H-c, C-d		N/A		N/A		N/A
RiverTec Property	3067	11.6	West	Former lead-smelting operations	Metals	NS	H-c, C-c	?	NS	H-c, C-d		N/A		N/A		N/A
Courtyard Hotel	2500	11.8	East	Contaminated soil from unknown source (removed)	Other	NS	H-c, C-d	?		H-d, C-d		N/A		N/A		N/A

Table 4.2-2. Upland Site Pathway Assessment Summary.^a

Site Name	ECSI #	River Mile	River Bank	Potential Upland and Overwater Sources	Industrial Sector (Historical and Current)	Pathway Summary											
						Groundwater			Direct Discharge				Overland Transport		Riverbank Erosion		
						COIs	Pathway Status	NAPL	Stormwater		Overwater		COIs	Pathway Status	COIs	Pathway Status	
									COIs	Pathway Status	COIs	Pathway Status					
<i>ECSI Sites within Shared Conveyance Systemsⁱ</i>																	
ANRFS (aka ABF)	1820	9.5	West	Freight terminal and truck maintenance shop, USTs	Other				3,6,7,9	H-b, C-d							
Ashland Chemical	1076	9.5	West	Former food processing facility, currently a chemical storage facility, stormwater discharges to COP storm sewer pipe	Chemical Manufacturing				3,6,7,9	H-b, C-c							
Calbag-Nicolai	5059	10.3	West	Nonferrous scrap metal facility	Metals				3,4,6,7,9	H-b, C-a							
Carson Oil	1405	9.7	West	Historic pipe leaks and spills, LUSTs, vehicle maintenance activities involving fuels, oil & grease, petroleum-based solvents, surface water discharges to COP storm sewer	Bulk Fuel				1,3,4,6,7,9	H-b, C-c							
Container Management	4784	9.5	West	Container reconditioning facility, water from oil/water separator discharged to COP storm sewer	Metals				3,4,5,6,7,9	H-b, C-c							
Container Recovery	4015	9.3	West	Truck fabricating activities, furnace manufacturing, sheet metal fabrication, stormwater discharges to COP storm sewer	Metals				3,6,7,9	H-b, C-c							
Front Avenue MP	4008	9.9	West	Former truck, crane, and rigging operations center; historical releases to soil, catch basins and sump	Other				1,3,4,6,7	H-b, C-d							
GE - NW 28th	No ECSI#	10	West	Former commercial PCB storage facility	Electrical Production				6	H-b, C-b							
Greenway Recycling	4655	8.4	West	Former automobile wrecking yard, vehicle towing and storage, garbage hauling, current construction debris transfer station	Metals				1,4,6,7	H-b, C-d							
Galvanizers	1196	9.4	West	Zinc galvanizing operation since 1940s; some storage of process chemicals, and hazardous and non-hazardous wastes	Metals				3,4,7,9	H-b, C-b ¹							
PGE - Forest Park	2406	8.3	West	Electrical equipment storage	Electrical Production				6	H-c, C-d							
Paco Pumps	146	9.1	West	Pump manufacturing and refurbishing facility	Metals				4,6	H-c, C-d							
Wilhelm Trucking (aka Magnus/Wilhelm)	69	9.6	West	Former lead bearing rehabilitation plant (lead molting operations). Currently, trucking terminal with main shop, wash pads, fuel tanks, and mobile fueling.	Metals				6,7	H-c, C-c							
SFI	5103	10	West	Former metal working and forge hammering operations	Steel Manufacturing				1,3,4,6,7	H-a, C-c							
<i>Additional ECSI Sites Identified by USEPA in the March 2010 General Notice Letters</i>																	
Hercules, Inc.	988	9.8	West	Manufacturer of water-soluble polymers for paper, emulsions and defoamers	Chemical Manufacturing	NS	H-c, C-c	?	NS	H-c, C-c		N/A		N/A		N/A	
Island Holdings (Cenex Ag Inc., Watumul Properties)	260	9	East	Dumping of waste materials and pesticides into storm drain	Other	NS	H-c, C-d	?	NS	H-c, C-d		H-c, C-d	NS	H-c, C-c	NS	H-c, C-c	
Lynden Farms (Foster Poultry Farms, Samuelson Properties, ATC Leasing)	4461	8.9	East	UST release, PCBs detected in soil during UST removal. Site redeveloped with stormwater treatment	Other	NS	H-c, C-c	?	NS	H-c, C-d		H-c, C-d	NS	H-c, C-d	NS	H-c, C-c	

Table 4.2-2. Upland Site Pathway Assessment Summary.^a

Site Name	ECSI #	River Mile	River Bank	Potential Upland and Overwater Sources	Industrial Sector (Historical and Current)	Pathway Summary										
						Groundwater			Direct Discharge				Overland Transport		Riverbank Erosion	
						COIs	Pathway Status	NAPL	Stormwater		Overwater		COIs	Pathway Status	COIs	Pathway Status
									COIs	Pathway Status	COIs	Pathway Status				

Notes:

^a The information contained in this table is based on information obtained by LWG from DEQ files as of July 2006 and correspondence with USEPA reflecting conditions as of September 2008, USEPA comments on the Draft RI in July 2010, and information provided in the September 2010 DEQ Milestone Report. Some modifications have been made at sites with information provided by LWG through July 2011. Information on sites upriver of RM 11 is limited to LWG review of ECSI. This table is not an exhaustive list of current or historical sources of contamination. Identification and evaluation of potential sources is ongoing.

^b This site has an active NPDES permit with a direct discharge to the river. See Table 4.3-1 for additional information.

^c Sites for which SWPCP plans are on file with LWG, obtained from DEQ files in 2005.

^d COIs identified based on review of LUST files and confirmed release records on the ECSI database.

^e VOC COIs include only BTEX for the Gasco site.

^f Non-PAH SVOCs include only carbazole, dibenzofuran, 2,4-dimethylphenol, 1- and 2-methylnaphthalene, 2- and 4-methylphenol, and phenol for the Gasco site.

^g EOSM’s permitted discharge from their wastewater plant was not a complete pathway.

^h VOCs characteristic of Gasco are likely to have been transported overland.

ⁱ Stormwater COIs at these ECSI sites were identified based on independent investigations, see Table 4.4-3.

^j DEQ identified the COP outfalls as a group. Not all outfalls are known current or historical sources.

^k The overwater pathway is designated H-a or C-a when a release has been documented in the DEQ ERIS database, USCG records, or other similar documentation. If no spills have been recorded for a facility that had or has overwater pathways, the pathway is H-b, C-b.

^l These sites have or had groundwater infiltration into the City storm sewer.

ECSI number: DEQ Environmental Cleanup Site Information database number

COI: A chemical is listed as a pathway COI if it was detected in sampled media, identified as having been released to site media, or documented to have been released directly to the river from site operations.

1: VOCs
2: SVOCs
3: PAHs
4: TPHs
5: Pesticides/Herbicides (e.g., DDT, chlordanes, aldrin)
6: PCB Aroclors and congeners
7: Metals
8: Butyltins
9: Phthalates
10: Other (e.g., PCDD/Fs, cyanide)
11: None reported

Pathway: The potential for impacting in-water media rated as follows:

a: The pathway is known to be a contaminant migration pathway - the pathway discharges to the river and there are contaminants of interest (COIs) associated with the pathway.
b: Likely a complete pathway.
c: Insufficient data to make determination.
d: The pathway is either not complete or has been determined by DEQ to be insignificant (DEQ 2010a)
N/A: Pathway does not exist at site.

Historical/Current: Available information indicates if the predominant impact to in-water media is historical (H) or current (C).

NAPL: Available information indicates the presence of historic or current NAPL (Y/N).

N/A = Not applicable, pathway is not present at site (e.g., riverbank at an inland site).

NS = No sampling of upland COIs reported. For stormwater/wastewater, no sampling beyond permit requirements reported.

? = Unknown, typically due to lack of sampling information.

ASR - automobile shredder residue
AST - aboveground storage tank
BTEX - benzene, toluene, ethylbenzene, and xylenes
BWTP - ballast water treatment plant
CCA - chromium copper arsenate
COI - contaminant of interest
COP - City of Portland
CRSG - Columbia River Sand and Gravel
DEQ - Oregon Department of Environmental Quality

DSL - Oregon Division of State Lands
DTL - direct to locomotive
ECSI - Environmental Cleanup Site Information
EOSM - Evraz Oregon Steel Mills
USEPA - U.S. Environmental Protection Agency
GW - groundwater
KI - Koppers International
LUST - leaking underground storage tank
LWG - Lower Willamette Group
MPR - manufacturing process residue
NAPL - non-aqueous phase liquid
NPDES - National Pollutant Discharge Elimination System
PAH - polycyclic aromatic hydrocarbon
PCE - tetrachloroethene
PCB - polychlorinated biphenyl
PEO - Premier Edible Oils
PGE - Portland General Electric
RM - river mile
SFPP - Santa Fe Pacific Pipeline
SWPCP - stormwater pollution control plan
SVOC - semivolatile organic compound
TCA - trichloroethylene
TFA - tank farm area
TPH - total petroleum hydrocarbon
UST - underground storage tank
VOC - volatile organic compound
WPCL - Water Pollution Control Laboratory
WWTP - wastewater treatment plant

Table 4.2-3. Shoreline or Nearshore Facilities Upstream of RM 11.8 Listed in DEQ's ECSI Database.^a

ECSI #	Facility or Site Name/Status	Address	Type(s) of Operation	Hazardous Substances/Waste Types	Detected Chemicals in Upland Samples ^b	Potential Pathways to River ^c
71	Martin Electric (aka. Warren Oliver Co.)/ NFA - 1993	91 Foothills Rd. Lake Oswego, OR 97034	Electrical equipment firm	PCBs from transformer waste oils	PCB 1221(S)	Unknown
123	Huntington Rubber Corp. (combined with Willamette Oaks Building -ECSI #883)/ O&M 6/08	7030 SW Macadam Ave. Portland, OR 97219	Rubber products manufacturer	Petroleum	Petroleum-contaminated wastewater	WW
129	Jeff Lohr Residence (aka. Agnes Olsen Residence, Ivan B. Carlson Residence, The Barlow House [1887], Eileen Olsen Property)/FA 8/01	1206 Washington St. Oregon City, OR 97045	Private home	PCBs, oil	Oil- or fuel- related compounds(S), PCBs(S)	Unknown
151	Portland General Electric Station L/ NFA 1994 sediment cap	1841 SE Water Ave. Portland, OR 97214	Steam electric plant, electrical equipment maintenance and warehousing	PCBs, heavy metals, BTEX, PAHs	PCB(S)	DR, GW
263	West Linn Paper Company (aka. Crown Zellerbach, James River Corp. - West Linn Mill, Simpson Paper Co. Evergreen Mill, West Linn Paper Co. Willamette Falls Mill, Simpson Hog Fuel Site)/ No further remedial action under federal program 10/09	4800 Mill St. West Linn, OR 97068	Wood pulping and specialty paper mill in operation since 1888	Oil, PCBs, PCDD/Fs	Oil- or fuel- related compounds(S), PCB 1221(S)	DR, GW
283	Willamette Falls Locks (COE Civil Willamette Falls Locks, US Army Corps of Engineers)/ XPA recommended 1992	Between lock gates 4 & 5, west side of West Linn, OR 97068	Water transportation, freight	Heavy metals, ammonia, methylene chloride, oils, latex, clarified white water	Ammonia(S), arsenic(S), chromium(S), lead(S), methylene chloride (surface water)	DR
334	I-5/I-84 pesticide spill/DEQ spill response initiated cleanup, site screening recommended 2/94	I-5 & I-84 interchange Portland, OR 97232	450 lbs. CAPTAN (endosulfan) spilled from overturned truck on 2/86	Endosulfan	No information in ECSI	Unknown
383	Old Town Parking-Helistop Structure/ RA 1992	33 NW Davis St. Portland, OR 97209	Broadway Cab Co. service center (mid-1950s-1985)	PAHs, ammonia, heavy metals, PAHs, BTEX	VOCs (GW), PAHs (GW)	GW
602	South Waterfront Redevelopment Area - now Strand Condominium Towers (aka. Lincoln Steam Plant, Pacific Power & Light)/ Remedial action 10/05	SW River Dr. Portland, OR 97201	Parcel 3A - site of former Lincoln Steam Plant	PAHs, lead, arsenic, asbestos, PCBs	Lead(B), oil(S)	DR, GW, SW
689	Zidell Marine Corporation(aka. North Macadam Project, Zidell Explorations)/ROD 2/05, consent decree 6/06, remedial design 9/06	3121 SW Moody Ave. Portland, OR 97201	Ship dismantling, barge construction, tube forging; numerous oil spills reported; fire pits for burning debris and insulation; ballast water discharged onsite	Metals, petroleum hydrocarbons, asbestos, PCBs	Antimony(B), arsenic(S), benzene(GW), chromium(S), lead(S), nickel(B), oil(B), PCBs(B), PAHs(S), tributyltin(S). Metals, PAHs, PCBs, and butyltins also present in sediments.	DR, GW, SW
812	BLE Inc. (aka. BLE Inc. Jeepers Its Ericksons, Ericksons Automotive, Groundwater - Foothills Road Industrial Area, Lake Oswego Area Groundwater Contamination, Lake Oswego Public Water Supply RPN)/ Remedial action recommended 6/00	Eastern end of Lake Oswego; impacted city well at 101 Foothills Rd. Lake Oswego 97034	Inactive public water supply wells	PCE, TCE, cis-1,2-DCE	VOCs(GW)	GW

Table 4.2-3. Shoreline or Nearshore Facilities Upstream of RM 11.8 Listed in DEQ's ECSI Database.^a

ECSI #	Facility or Site Name/Status	Address	Type(s) of Operation	Hazardous Substances/Waste Types	Detected Chemicals in Upland Samples ^b	Potential Pathways to River ^c
875	Schnitzer - SW Moody Ave. (also #1401 SW Moody Right-of-way)/ Unit B: NFA, Units A & C: Phase I RA done 12/95, Phase II RA incorporates development	Units A, B, & C Moody Ave. Portland, OR 97201	Former metals salvaging, processing, & pesticides formulation; property transferred to OHSU	Unit A soils: DDTs, hexachloropentadiene, PCBs, TCE, 1,2 DCE, acetone; Unit A groundwater: barium, lead, cadmium, chromium, lead, zinc, acetone, carbon disulfide, benzene, toluene, 4- methyl-2-pentanone, ethylbenzene, cineole, cyanide; Unit C soils: lead, PCBs, cPAHs	Unit A soils: DDTs, hexachloropentadiene, PCBs, TCE, 1,2-DCE, acetone; Unit A groundwater: barium, lead, cadmium, chromium, lead, zinc, acetone, carbon disulfide, benzene, toluene, 4- methyl-2-pentanone, ethylbenzene, cineole, cyanide; Unit C soils: lead, PCBs, cPAHs	SW, GW
876	North Waterfront Park/ PA recommended 7/92	NW Front Ave. Portland, OR 97209		Benzene, toluene, xylene, ethylbenzene	Benzene(GW), ethylbenzene(B), toluene(B), xylenes(B)	SW, GW
985	Grunbaum Property (aka. Winter Products [former], North Macadam District Project, Konell Construction & Demolition Corp.)/Confirmed Release List 4/04	3604 SW Macadam Ave. Portland, OR 97201	Winter manufactured die-cast zinc furniture hardware with finishes used in the die-cast process; treated wastewater discharged to City sewer. Winter Products relocated in mid-1980s. Currently being redeveloped by Dane Development.	Electroplating wastes - zinc, copper, nickel, cyanide; petroleum products, PCE, TCE	Arsenic (GW), lead (S), petroleum (S), PCE (B), TCE (GW)	SW, GW
986	Winkler Scrap Metal Inc./ Confirmatory sampling recommended 10/96	1737 SE Rhine St. Portland, OR	Scrap metal recycling, including transformers	PCBs, solvents, phenols, BEHP, dioxin/furans	No information in ECSI	Unknown
1006	Oaks Bottom Landfill (aka. Sellwood Disposal Site)/ NFA 1996	1S/1E/S23 Portland, OR 97202	Closed solid waste landfill	Former demolition debris and brush landfill	No information in ECSI	Unknown
1066	Gross Property Disposal Site/ NFA 1992	3S/1E/S2 West Linn, OR 97068	Vacant farm land	PCBs	PCBs(S)	Unknown
1135	NW Cast Metal Products, Broad Spectrum Electronics Lab (aka. Auric Ent., H & M Electronics, Pacific Meats, NW Cast Metal Products, Ross Electric)/ Site confirmatory sampling required 3/96	79 SE Taylor St. Portland, OR 97214	Former Southern Pacific Railroad warehouse, 1912 International Harvester Building, warehouse for several other parties over the years, lab located on 3rd floor in corner of building	Alleged dumping of PCBs, solvents, lead, arsenic, mercury, zinc, cyanide compounds, phenols, acids	PAHs (S)	Unknown
1138	Portland Gas Manufacturing Site (aka Portland Gas & Coke Co.,MGP, Portland Gas Light Co.)/ RI 10/08	NW 1st and Everett Portland, OR 97209	Former coal/gas manufacturing (Portland Gas and Coke) (1860-1913)	Coal and oil tars, BTEX, spent iron oxide, process wastewaters	VOCs, PAHs (GW); VOCs, PAHs, and cyanide present in sediment	SW, WW, DR?, GW
1258	Abes Main St. Cleaners (aka. Chris & Jessies Main St. Cleaners, ODEQ Abes Main St. Cleaners, Parker J Former Abes Main St. Cleaners)/Remedial action	10863 SE Main St. Milwaukie, OR 97222	Laundry/dry cleaner	Perchloroethylene, trichloroethylene, Stoddard solvent	Tetrachloroethylene(B)	GW, WW
1292	Gibson-Homans Co./USEPA SI 1985, site screening recommended in 1994	3419 SW Moody Ave. Portland, OR 97201	Manufactures protective coatings, including asphaltic roof coatings, aluminum roof coatings, putty, caulk, sealants, wood preservatives, adhesives	No noticeable discharges	No information in ECSI	Unknown
1394	Louis Dreyfus Facility/ Placed on Confirmed Release List 3/97 (low priority)	(foot of) N Holladay St. Dock & Elevator Portland, OR 97227		Petroleum	TPH(S)	DR, GW (unknown)

Table 4.2-3. Shoreline or Nearshore Facilities Upstream of RM 11.8 Listed in DEQ's ECSI Database.^a

ECSI #	Facility or Site Name/Status	Address	Type(s) of Operation	Hazardous Substances/Waste Types	Detected Chemicals in Upland Samples^b	Potential Pathways to River^c
1923	Westwood Corp.(aka. Swinterton Builders)/ FS 2000, NFA 2000	3030 SW Moody Ave., Ste. 250 Portland, OR 97201	Foundry & scrap business (1930s-1984)	Diesel-range petroleum, metals, possibly PCBs and PAHs	Diesel, kerosene, lead (S)	SW, GW
1925	Mackenzie/Saito Property (North Macadam District Project)/ PA recommended 11/96	690 SW Bancroft St. Portland, OR 97201	Lumber mill (former)	Oil-range hydrocarbons, PAHs	Benzene(GW), PAHs(GW), ethylbenzene(GW), oil(S), toluene(GW), xylenes(GW)	GW
1973	PECO Mfg. Co., Inc./ RA 1/09	4707 and 4720 SE 17th Ave. Portland, OR	Manufacturer of specialty cast and machine parts	PCBs, PCE, TCE	PCBs(S), PCE and TCE(GW)	GW
2114	Sullivan Electrical Substation/ Site screening recommended	5600 Willamette Falls Dr. West Linn, OR 97068	Electrical substation	No information in ECSI	No information in ECSI	Unknown
2232	Innventures (aka. CM Company Inc. a corp. of Id., Marriott Residence Inn, Portland Development Commission - lot 5)/ Hotspot cleanup, site effectively capped, delisted 2002	2115 SW River Pkwy. Portland, OR 97201	Lumber storage (~1900-1950) for the Portland Lumber Company; scrap steel storage (1950s-1970s); 1994-1995 storage for PAH-contaminated soil	Diesel & heavy oil, petroleum hydrocarbons, metals	PAHs, gasoline, oil or fuel-related compounds (S)	Unknown
2247	Heath Oregon Sign Company/ Placed on confirmed release list 9/02	4644 SE 17th Ave. Portland, OR	Sign manufacturing	Metals, PCBs, TCE, PCE	Arsenic(S), beryllium(S), PCBs(S), TCE and PCE(GW)	GW
2301	Clackamette Cove Area (aka. City of Gladstone, Clackamas County Sheriff's Office, Dakota Minerals, Kline Line Sand & Gravel, Portland Traction Railroad, City of Oregon, Jack Parker Property, Northwest Aggregates Co., Western Pacific Construction Materials Co.)/ RA 1/04	16288 Main St. Oregon City, OR 97045	No information in ECSI	Gasoline (BTEX, PAHs), heavy metals, asphalt, diesel & lube oil-range TPH, PAHs, chlorinated hydrocarbons	Arsenic(B), chlorobenzene(GW), chromium(S), dichlorobenzene(GW), iron(GW), lead(B), TPH(S)	GW
2409	Ross Island Sand & Gravel Co. (Hardtack Island Plant)/RA 11/05 & land-use assessment 3/06	Hardtack Island-Willamette River Milepost 15, 4315 SE McLoughlin Blvd Portland, OR 97201	No information in ECSI	PCBs, PAHs, petroleum, metals, pesticides/herbicides	Copper(S), PCBs(S), PAHs(S), tributyltin(S)	GW
2414	Eastbank Riverfront Project (aka. Eastbank Esplanade, Portland Development Commission)/ Partial NFA 1999	Portland, OR 97214	No information in ECSI	Lead, petroleum	Lead(S), petroleum(S)	Unknown
2492	South Waterfront Redevelopment Area 3/ ROD 1/04, RA 2/04, Inventory 4/04	SW River Pkwy. & SW Harbor Dr. Portland, OR 97201	Portland Lumber Company (former)	PAHs, metals, diesel, lead, oil	PAHs(B), cadmium(GW), chromium(GW), diesel(S), lead(GW), oil(S)	GW
2613	Willamette View Inc. (aka. Spears, Willie Hot, Willamette View Manor, Willamette View Retirement Home,)/ Site screening recommended 2001	12705 SE River Rd. Portland, OR 97222	Retirement home	diesel-range TPH, lead (offsite source suspected)	TPH(B)	GW
2616	Erickson's Automotive (aka. BLE Inc. Jeepers Its Ericksons, Ericksons Automotive, Groundwater - Foothills Road Industrial Area, Lake Oswego Area Groundwater Contamination, Lake Oswego Public Water Supply RPN)/ NFA 3/04	101 Foothills Rd. Lake Oswego, OR 97034	No information in ECSI	Petroleum, PAHs, VOCs (benzene, toluene, ethylbenzene, xylenes, and chlorinated hydrocarbons)	Dichloroethylene(GW), naphthalene(GW), tetrachloroethylene(GW), trichloroethylene(GW)	GW

Table 4.2-3. Shoreline or Nearshore Facilities Upstream of RM 11.8 Listed in DEQ's ECSI Database.^a

ECSI #	Facility or Site Name/Status	Address	Type(s) of Operation	Hazardous Substances/Waste Types	Detected Chemicals in Upland Samples ^b	Potential Pathways to River ^c
3104	Rodda Paint Building (former)/ Placed on Inventory 4/02	6932 SW Macadam Ave. Portland, OR 97219	Paint-making operation (former)	Toluene, xylene-based solvents, mineral spirits, paint wastes containing metals, water-based resins, petroleum hydrocarbons, chlorinated VOCs	Acetone(S), butylbenzenes(S), chloroform(GW), cumene(B), dichloroethane(GW), dichloroethylenes(GW), ethylbenzene(S), propylbenzene(B), tetrachloroethylene(GW), toluene(GW), trichloroethane(GW), trichloroethylene(GW), trichloromonofluoromethane(GW), trimethylbenzene (GW), vinyl chloride (GW), xylenes (GW)	GW, SW, WW, DR
3993	Pacific Richfield - South Waterfront (aka. North Macadam Investors, North Macadam Central district, Rosebud Holdings, Waterfront South)/ Cleanup 1/04 & partial NFA 4/06	3305-3401, 3500 SW Bond St. Portland, OR 97239	Previously used for sand & gravel operations (1930-1989); small welding shop operated for short period afterward.	Petroleum hydrocarbons, SVOCs, PAHs in localized areas	TPH (S), arsenic (S), low levels of PAHs (GW)	Unknown
4007	Prometheus Property (aka. Lakeside Industries [circa 1989], North Landing, The Landing at Macadam, LLC)/ Placed on Confirmed Release List 11/05	Bond & Lowell St. T1S/R1E/S10 Portland, OR 97201	Undeveloped, former asphalt manufacturing plant (formerly Lakeside); 6-8 USTs with leakage	PAHs, diesel, PCBs, metals	Diesel (S), HPAH (S)	GW, SW
4026	Lake Oswego Chip Facility (Crown Zellerback, Georgia Pacific Wood Chip Facility, Foothills Park, James River Paper Company, City of Lake Oswego)/ RA 2/05 & NFA 10/05	199 Foothills Rd. Lake Oswego, OR 97034	Chip processing, rail lines, barge loading, wood chip loading	PAHs, metals, herbicides	Gasoline (GW), PAHs (S)	GW, SW
4036	US Bank/Blocks 25 & 29 excavated in 2004, partial NFA 5/05	3505-3439 & 3400-3500 SW Bond Ave. Portland, OR 97239	Currently being redeveloped for mixed urban res./comm.; past uses include shipbuilding (1943-1945), steel and metal fabricating, electrical products manufacturing. Blocks 25/29 used for storage of logging and surplus Zidell equipment. Recently used for warehouse/office space with parking/loading dock.	Localized areas of petroleum hydrocarbon contamination	TPH (S)	SW
4085	Two Main Place/ quick cleanup performed for redevelopment/ Conditional NFA 2009	101 SW Main St. Portland, OR 97204	Parking lot for approximately past 20 years; gas stations and laundries in the past	Gasoline and chlorinated hydrocarbons	Petroleum (S, GW), PCE (GW)	Unknown
4416	Oak Tower Redevelopment/ RA 4/06 & proposed for inventory 10/06	225 Oak St. Portland, OR 97204	Heating oil spill	TPH, PAHs, TCE	Diesel (S), TCE (GW)	Unknown
4420	South Waterfront at River Place - Stanford's Rest., RiverPlace Square Apts (Trammel Crow)/ Added to database 5/05	Parcel 2 Areas B&C SW River Dr. Portland, OR 97201	No information in ECSI	No information in ECSI	No information in ECSI	Unknown
4421	South Waterfront at River Place - SW River Drive & SW River Parkway w/ storm drains/ Consent decree 1989	Parcel 2 Area A, SW River Dr. and SW River Pkwy., Portland, OR 97201	No information in ECSI	No information in ECSI	No information in ECSI	Unknown
4422	South Waterfront Park - on the river (aka. South Waterfront Redevelopment Area, Parcel 3A/3B)/ RA (capped PAH-contaminated soil, bank stabilization) 10/05	Parcel 3A & 3B, Area D Foot of SW Montgomery St., Portland, OR 97201	Parcel 3A - site of former Lincoln Steam Plant	No information in ECSI	No information in ECSI	Unknown

Table 4.2-3. Shoreline or Nearshore Facilities Upstream of RM 11.8 Listed in DEQ's ECSI Database.^a

ECSI #	Facility or Site Name/Status	Address	Type(s) of Operation	Hazardous Substances/Waste Types	Detected Chemicals in Upland Samples ^b	Potential Pathways to River ^c
4423	South Waterfront Park- PGT Building(aka. South Waterfront Parcel 3B)/ NFA 1994, added to database 5/05	Parcel 3B SW River Pkwy. Portland, OR 97201	No information in ECSI	No information in ECSI	No information in ECSI	Unknown
4424	South Waterfront River Place Lot 108- NE corner SW River Dr/SW River Pkwy/ FS 2/05, asbestos removal alternatives 5/05	Parcel 3B, Area D SW River Pkwy./SW River Dr. (NE Corner) Portland, OR 97201	No information in ECSI	Buried asbestos	No information in ECSI	Unknown
4426	East Portland Gas Works (former)/ Site screening recommended 6/05	110 SE 2nd Ave. & 5 SE Martin Luther King Ave. Portland, OR 97214	Former gas plant	PAHs	No testing has been completed	Unknown
4527	Neighborhood Park (public Storage)/ NFA 2007	3508 SW Moody Ave. Portland, OR 97239	Machine shop and door manufacturer (1950's-1960's), now storage units	PAHs, VOCs, metals	Diesel-range petroleum hydrocarbons (GW), VOCs (B), metals (B), PAHs (S)	Unknown
4578	Everett Street Building/site screening recommended 1/06 (Kronke, Trutz)	509 NW Everett St. Portland, OR 97209	No information in ECSI	PAHs and lead, unknown source	PAHs (S), lead (S)	Unknown
4597	Traschel Property (aka. American Cleaners)/Independent cleanup 3/06	502/503 Main St. Oregon City, OR 97045	Former dry cleaner, auto sales, auto repair	Gas, diesel, VOCs	Diesel (B), PCE (GW), gas (S), waste oil (S)	Unknown
4612	Waterside Development Project/ Site screening recommended 2006	4850 SW Macadam Ave. Portland, OR 97201	No information in ECSI	No information in ECSI	Barium (B), diesel-range petroleum hydrocarbons (S), heavy-oil total petroleum hydrocarbons (S), naphthalene (GW), lead (S)	Unknown
4621	King Crusher/ Added to Independent Cleanup Program 2006	1306 NE 2nd Ave. Portland OR 97323	This is a heavy equipment manufacturer (rock crushing equipment).	Petroleum Hydrocarbons	No information in ECSI	Unknown
4629	South Waterfront Central District Blocks 46 and 49/ Recommended for Confirmed Release List 2009	601 SW Abernathy St. Portland, OR 97201	Past use: warehouse (furniture, doors, lumber), road construction equipment storage, asphalt storage, and gravel storage. Current use: vacant land and temporary parking area. Three USTs formerly onsite; operational practices.	TPH, PAHs, VOCs, and metals	No information in ECSI	GW
4825	South Waterfront Central District Blocks 46 and 49 Was originally a subset of ECSI # 4629/ Remedial Action 2006	601 SW Abernathy St. Portland, OR 97201	No information in ECSI	Oil-range petroleum hydrocarbons and polynuclear aromatic hydrocarbons.	No information in ECSI	Unknown
4632	Rexel/Taylor Electric Warehouse/ PPA and closeout 2010	1709 SE 3rd St. Portland, OR	No information in ECSI	Estimated 10 gallons of oil released during an onsite fire	PCBs	SW, GW
4723	Pacific Pride/ Site evaluation 2008	6230 SW Macadam Ave. Portland, OR 97239	The site is the former location of an auto wrecking yard (Mesher/Union Auto Wrecking Co.; 1930-35), a former boat building facility (Willamette Boat & Manufacturing Co.; 1936-41), and a bulk fuel storage facility	TPH, PAHs, VOCs, and metals	PAHs (GW), VOCs (GW), TPH-diesel (GW), TPH-gas (B)	GW

Table 4.2-3. Shoreline or Nearshore Facilities Upstream of RM 11.8 Listed in DEQ's ECSI Database.^a

ECSI #	Facility or Site Name/Status	Address	Type(s) of Operation	Hazardous Substances/Waste Types	Detected Chemicals in Upland Samples ^b	Potential Pathways to River ^c
4772	Macadam Sunset Fuel - Pacific Pride Site 2/ Site evaluation 2008	6230 SW Macadam Ave.	The site is the former location of an auto wrecking yard (Mesher/Union Auto Wrecking Co.; 1930-35), a former boat building facility (Willamette Boat & Manufacturing Co.; 1936-41), and a bulk fuel storage facility	TPH, PAHs, VOCs, and metals	PAHs (GW), VOCs (GW), TPH-diesel (GW), TPH-gas (B)	GW
4724	JC Cleaners/ NFA 2009	6141 SW Macadam Ave. Ste. 101 Portland, OR 97239	Dry cleaning facility, former metal fabrication	PCE and TCE	No information in ECSI	GW
4789	Lake Texaco Service/ Site screening recommended 2007	496 N State St. Lake Oswego, 97034	The property has been an operating service station since 1939.	Gasoline and heavy oil and grease	No information in ECSI	GW
4811	Blue Heron Paper Mill/ Site investigation 2008	419 Main St. Oregon City, 97045	Wood pulping and paper manufacturing activities since 1908	PCBs, metals, TPH, PCDD/Fs	No information in ECSI	Unknown
4824	Pollock Building/ Site screening recommended 2007	406 A Avenue Lake Oswego, OR 97034	Former dry cleaning operation	PCE	No information in ECSI	GW
4914	ODOT Right-of-Way, SW Harbor Dr. below I-405 RAMP/ Site screening recommended 2007	East edge of SW Harbor Drive, below westbound I-5 exit ramp onto I-405 Portland, OR 97201	No information in ECSI	No information in ECSI	No information in ECSI	Unknown
4925	Oregon Plating Company/ Site evaluation 2009	436 SE 6th Ave Portland, OR 97214	Electroplating activities for the past 75 years	Acids, bases, toxic metals (chromium, copper, nickel, silver, zinc, lead, cadmium), cyanide salts, ammonium salts, and chlorinated solvents (methylene chloride)	No information in ECSI	SW, GW
4956	Downtown Portland Sediment Areawide Investigation/ Site investigation 2008	Willamette River, from Ross Island to downtown Portland	No information in ECSI	No information in ECSI	No information in ECSI	Unknown
5249	PGE Willamette River Sediment Investigation/ Negotiations 2009	River Mile 13.1 E to 13.5 E and upland sources	No information in ECSI	PCBs, chlordanes, DDTs, and dioxins	PCBs, chlordanes, DDTs, and dioxins (S)	Unknown
5258	Westmoreland Cleaners/ NFA 2010	6701/6717 SE Milwaukie Ave., Portland, OR 97202	Dry cleaning facility	TCE, PCE	TCE, PCE (GW)	GW
5277	South Waterfront Central District Greenway/ Site investigation 2009	South Waterfront Central District, Portland, OR 97329	Former cement manufacturing debris, possible shipbuilding or shipbreaking activities	Lead, PCBs	No information in ECSI	Unknown
5327	Macadam Landing/ Conditional NFA 2010	6633-6639 SW Macadam Ave. Portland, OR 97329	Former roofing activities, housing development, USTs	TPH-Diesel, VOCs, PAHs	TPH-Diesel (S)	Unknown
5392	BENT 3-Portland Streetcar Extension/ Site screening recommended 2010	SE MLK Blvd & SE Taylor, Portland, OR 97214	No information in ECSI	PAHs	PAHs (S)	Unknown
No ECSI#	Portland General Electric Company	301 SE Morrison St. Portland, OR	Spill from pole transformer	PCBs	No information in ECSI	DR

Table 4.2-3. Shoreline or Nearshore Facilities Upstream of RM 11.8 Listed in DEQ's ECSI Database.^a

ECSI #	Facility or Site Name/Status	Address	Type(s) of Operation	Hazardous Substances/Waste Types	Detected Chemicals in Upland Samples ^b	Potential Pathways to River ^c
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Notes:

^a Source: <http://www.deq.state.or.us/lq/ecsi/ecsi.htm>

^b S=soil or sediment, GW=groundwater, B=both

^c Pathways Identified in ECSI Site Summary Reports: GW = groundwater, SW = stormwater/surface runoff, WW = wastewater discharge, DR = direct release, spill

BEHP - bis-2(ethylhexyl) phthalate

BTEX - benzene, toluene, ethylbenzene, and xylenes

cPAH - carcinogenic polycyclic aromatic hydrocarbon

DCE - dichloroethene

DEQ - Oregon Department of Environmental Quality

ECSI - Environmental Cleanup Site Information

FS - feasibility study

HPAH - high molecular weight polycyclic aromatic hydrocarbon

NFA - No Further Action

PAH - polycyclic aromatic hydrocarbon

PCB - polychlorinated biphenyl

PCDD/F - dioxin/furan

PCE - tetrachloroethene

PPA - prospective purchaser agreement

RA - risk assessment

RI - remedial investigation

ROD - Record of Decision

SI - site investigation

SVOC - semivolatile organic compound

TCE - trichloroethene

TPH - total petroleum hydrocarbons

UST - underground storage tank

VOC - volatile organic compound

Table 4.3-1. Discharge Monitoring Requirements for Individual NPDES Permits within the Study Area.^a

Facility File No.	Permit No.	Facility Name	Conventional Monitoring Parameters ^b	Chemical Monitoring Requirements ^b	Mixing Zone (RMZ)	Zone of Immediate Dilution (ZID)
68471	100752	Arkema, Inc.	Outfalls 001, 002, 003, and 004: Flow - N/A Oil & grease - 10.0 mg/L pH - 5.5-9.0 TSS - 130 mg/L Floating solids - No visible discharge Oil & grease sheen - No visible sheen	Outfalls 001, 002, 003, and 004: Lead - 0.4 mg/L Zinc - 0.6 mg/L Copper - 0.1 mg/L	Outfalls 001, 002, 003, and 004: The mixing zone is that portion of the Willamette River within a 25-foot radius from the point of discharge. The Zone of Immediate Dilution (ZID) is that portion of the Willamette River within a radius of 2.5 feet from the point of discharge.	Outfalls 001, 002, 003, and 004: The ZID is that portion of the Willamette River within a radius of 2.5 feet from the point of discharge.
108460	102452	Columbia River Sand & Gravel - Linnton Dist. Facility	Outfall 001: Suspended solids - 40 mg/L (daily), 20 mg/L (monthly avg.) Turbidity - 90 NTU (daily), 60 NTU (monthly avg.)		The regulatory mixing zone will be a strip 15 meters wide and 100 meters long going downstream of the effluent pipe.	N/A
64905	101007	Evrax Oregon Steel Mills, Inc.	Outfall 001: Flow - 0.79 MGD TSS - 1,420 lb/day (daily), 532 lb/day (monthly avg.) TDS - 1136 mg/L (monthly avg.) Turbidity - 25 NTU (above stream background levels) Oil & grease - 15 mg/L pH - 6.0-9.0 Total residual chlorine - 0.34 mg/L (daily), 0.17 mg/L (monthly avg.) Excess thermal load (May-Oct) - 30 x 10 ⁶ Kcal/day (7-day moving avg. of daily max) Temperature - N/A Whole effluent toxicity testing - N/A	Outfall 001: Copper - 34 µg/L Zinc - 243 µg/L Total arsenic - 24 µg/L (quarterly avg.) Inorganic arsenic - N/A Cyanide - N/A Total phenols - N/A	Outfall 001: The mixing zone is that portion of the Willamette River within a 30.5-meter radius from the point of discharge.	Outfall 001: The ZID is that portion of the Willamette River within a radius of 3 meters from the point of discharge.
			Outfall 002: Flow - N/A Turbidity - No visually discernible plume at a radius of 10 meters from the discharge point		Outfall 002: The mixing zone is that portion of the Willamette River within a 10-meter radius from the point of discharge.	Outfall 002: The ZID is that portion of the Willamette River within a radius of 1 meter from the point of discharge.
			Internal monitoring point: Flow - N/A	Internal monitoring point: Lead (total recoverable) - 0.23 lb/day (daily), 0.078 lb/day (monthly avg.) Zinc (total recoverable) - 0.35 lb/day (daily), 0.117 lb/day (monthly avg.)	N/A	N/A
			Intake water monitoring: Turbidity - N/A		N/A	N/A
3690	102465	Ash Grove Cement	Outfall 001: Flow - 2,000 L/hr TSS - 50 mg/L (daily), 25 mg/L (monthly avg.) pH - 6.5-8.5 Temperature - N/A		Outfall 001: The allowable mixing zone shall not exceed a strip of the river 1 meter wide extending from the riverbank.	N/A
70725	994109	Columbia Boulevard Wastewater Treatment Plant (CBWTP)	The CBWTP discharges its effluent to the Columbia River; discharge monitoring requirements are applicable to the Columbia River only.	This permit covers CBWTP effluent discharged to the Columbia River and CSO and SSO discharges to the Willamette River; discharge monitoring requirements are applicable to the Columbia River only.	N/A	N/A

Table 4.3-1. Discharge Monitoring Requirements for Individual NPDES Permits within the Study Area.^a

Facility File No.	Permit No.	Facility Name	Conventional Monitoring Parameters ^b	Chemical Monitoring Requirements ^b	Mixing Zone (RMZ)	Zone of Immediate Dilution (ZID)
93450	101128	Wacker Siltronic Corporation	Outfall 001: <u>Flow</u> - N/A <u>TSS</u> - 61 mg/L (daily), 23 mg/L (monthly avg.) <u>BOD</u> - 30 mg/L (daily), 15 mg/L (monthly avg.) <u>Fluoride</u> - 32 mg/L (daily), 17.4 mg/L (monthly avg.) <u>Total phosphate</u> - 15 mg/L (daily), 10 mg/L (monthly avg.) <u>Turbidity</u> - N/A <u>pH</u> - 6.0-9.0	Outfall 001: <u>Total chromium</u> - 0.05 mg/L (daily), 0.02 mg/L (monthly avg.) <u>Total toxic organics</u> - 1.37 mg/L	N/A	N/A
			Outfall 002: <u>Flow</u> - N/A <u>Total phosphate</u> - 15 mg/L (daily), 10 mg/L (monthly avg.) <u>TSS</u> - N/A		N/A	N/A
			Outfall 003: <u>Free available chlorine</u> - 0.5 mg/L (daily), 0.2 mg/L (monthly avg.) <u>Total bromine</u> - 0.5 mg/L (daily), 0.2 mg/L (monthly avg.) <u>pH</u> - 6.0-9.0 <u>Temperature</u> - N/A <u>Excess thermal load (June-Sep)</u> - 22 x 10 ⁶ Kcal/day (7-day moving avg. of daily max)	Outfall 003: <u>Bioassays</u> - N/A	Outfall 003: The mixing zone shall consist of that portion of the Willamette River which forms a trapezoid set at right angle to the end of the outfall pipe at Outfall 003. The narrow end is 20 feet wide with the end of the outfall pipe centered on it. The wide end is 55 feet wide and is 200 feet from the outfall. The mixing zone changes with the daily tides from pointing upstream to pointing downstream and back.	Outfall 003: The ZID shall consist of that portion of the Willamette River which forms a trapezoid within the RMZ with the same orientation as the RMZ. It has a narrow end 2 feet wide centered on the end of the outfall pipe. The wide end is about 23 feet wide and is 20 feet from the outfall.
70596	101393	Vigor Industrial LLC (aka Cascade General, Inc.)	Outfall 001: <u>Flow</u> - 1.0 MGD <u>pH</u> - 6.0-9.0 <u>TSS</u> - 50 mg/L <u>TDS</u> - N/A <u>Oil & grease</u> - 10 mg/L	Outfall 001: <u>Copper (total recoverable)</u> - 0.34 mg/L <u>Zinc (total recoverable)</u> - 2.6 mg/L		
			Outfall 002: <u>Flow</u> - N/A <u>TSS</u> - 10 mg/L <u>Oil & grease</u> - 10 mg/L <u>pH</u> - 6.0-9.0	Outfall 002: <u>Copper (total recoverable)</u> - 0.23 mg/L <u>Lead (total recoverable)</u> - 0.15 mg/L <u>Zinc (total recoverable)</u> - 1.0 mg/L <u>Tributyltin (total recoverable)</u> - 0.02 mg/L <u>Iron</u> - N/A <u>Manganese</u> - N/A <u>Whole effluent toxicity testing</u> - N/A <u>Priority pollutant scan</u> - N/A	Outfalls 001 and 002: The allowable mixing zone is that portion of the Willamette River within a 10-meter radius from the points of discharge (i.e., the multi-port outfall diffuser).	Outfalls 001 and 002: The ZID is that portion of the Willamette River within a 3-meter radius from the outfall diffuser.
			Outfalls 005, 006, 007, and 008: <u>Flow</u> - N/A <u>Temperature</u> - 184 x 10 ⁶ Kcal/day <u>Excess thermal load</u> - N/A		Outfalls 005, 006, 007, and 008: The allowable mixing zone is that portion of the Willamette River within a 10-meter radius from the points of discharge.	N/A
108015	101314	City of Portland, Port of Portland, Multnomah County - Municipal Stormwater Permit	MS4 Discharge and Ambient monitoring: TSS, hardness, pH, conductivity, DO, temperature, nitrate-nitrogen, total phosphorous, oil and grease (non-polar and total)	MS4 Discharge and Ambient monitoring: total and dissolved metals - copper, lead, zinc; biological - E.coli	N/A	N/A

Table 4.3-1. Discharge Monitoring Requirements for Individual NPDES Permits within the Study Area.^a

Facility File No.	Permit No.	Facility Name	Conventional Monitoring Parameters ^b	Chemical Monitoring Requirements ^b	Mixing Zone (RMZ)	Zone of Immediate Dilution (ZID)
47430	101642	Koppers, Inc.	Outfall 001: <u>Flow</u> - N/A <u>Temperature</u> - 25°C <u>pH</u> - 6.5-8.5 <u>Oil & grease</u> - 15.0 mg/L (daily), 10.0 mg/L (monthly avg.) <u>Turbidity</u> - N/A	Outfall 001: <u>Phenols</u> - 0.7 mg/L (daily), 0.5 mg/L (monthly avg.) <u>Cyanide</u> - 8.5 µg/L (daily), 4.9 µg/L (monthly avg.) <u>PAHs (total)</u> - 250 µg/L <u>Benz(a)anthracene</u> - 0.032 µg/L <u>Benzo(a)pyrene</u> - 0.032 µg/L <u>Benzo(b)fluoranthene</u> - 0.032 µg/L <u>Benzo(k)fluoranthene</u> - 0.032 µg/L <u>Chrysene</u> - 0.032 µg/L <u>Dibenz(a,h)anthracene</u> - 0.032 µg/L <u>Benzene</u> - 25 µg/L <u>BTEX</u> - 250 µg/L <u>Silver</u> - N/A <u>Pentavalent arsenic</u> - N/A <u>Cadmium</u> - N/A <u>Copper</u> - N/A <u>Mercury</u> - N/A <u>Lead</u> - N/A <u>Tin</u> - N/A <u>Selenium</u> - N/A <u>Zinc</u> - N/A	N/A	N/A
74995	101180	Starlink Logistics (aka Rhone Poulenc)	Outfall 001: <u>TSS</u> - 30 mg/L <u>Temperature</u> - 73.5°F (7-day moving avg. of daily max) <u>pH</u> - 6.5-8.5	Outfall 001: <u>Chlorinated phenols</u> - 1.0 mg/L (daily), 0.5 mg/L (monthly) <u>Phenol</u> - 1.0 mg/L (daily), 0.5 mg/L (monthly) <u>Arsenic</u> - 0.36 mg/L <u>Lead</u> - 0.017 mg/L <u>Mercury</u> - 0.0004 mg/L <u>Bromoxynil</u> - 1.2 mg/L <u>DDT</u> - 0.1 µg/L <u>2,3,7,8-TCDD</u> - 10 pg/L <u>OCDD</u> - N/A <u>2,3,7,8-TCDF</u> - N/A <u>Total TCDF</u> - N/A <u>Total PeCDF</u> - N/A <u>OCDF</u> - N/A <u>Bioassay</u> - N/A	The mixing zone is that portion of the Willamette River within a 25-foot radius from the point of discharge.	The ZID is that portion of the Willamette River within a 2.5-foot radius from the point of discharge.
			Internal Monitoring Point 101: <u>Flow</u> - 1 L/sec <u>TSS</u> - 20 mg/L	Internal Monitoring Point 101: <u>Lead</u> - 0.082 mg/L <u>Arsenic (trivalent)</u> - 0.36 mg/L		
100025	102446	Kinder Morgan/Portland Bulk Terminal 4	Outfall 001: <u>pH</u> - 6.5-11 <u>TSS</u> - 130 mg/L <u>Oil & grease</u> - 10 mg/L <u>Floating solids</u> - No visible discharge <u>Oil & grease sheen</u> - No visible sheen	Outfall 001: <u>Total copper</u> - 0.100 mg/L <u>Total lead</u> - 0.120 mg/L <u>Total zinc</u> - 0.300 mg/L	The mixing zone is a strip 3 meters wide extending downstream for 3 meters from the point of discharge.	N/A

Table 4.3-1. Discharge Monitoring Requirements for Individual NPDES Permits within the Study Area.^a

Facility File No.	Permit No.	Facility Name	Conventional Monitoring Parameters ^b	Chemical Monitoring Requirements ^b	Mixing Zone (RMZ)	Zone of Immediate Dilution (ZID)
100517	101613	Univar USA	Outfall 001: pH - 6.5-8.5 <u>Oil & grease</u> - 15 mg/L (daily), 10 mg/L (monthly avg.) <u>Flow (June-Sep)</u> - 14 gpm (monthly avg.) <u>Flow (Oct-May)</u> - 23 gpm (monthly avg.)	Outfall 001: <u>Benzene</u> - 8 µg/L (daily), 5 µg/L (monthly avg.) <u>Chloroethane</u> - 8 µg/L (daily), 5 µg/L (monthly avg.) <u>1,2-Dichloroethane</u> - 8 µg/L (daily), 5 µg/L (monthly avg.) <u>1,2-Dichloroethene</u> - 40 µg/L (daily), 25 µg/L (monthly avg.) <u>1,1,1-TCA</u> - 21 µg/L (daily), 13 µg/L (monthly avg.) <u>1,1,2-TCA</u> - 8 µg/L (daily), 5 µg/L (monthly avg.) <u>Trichloroethene</u> - 77 µg/L (daily), 53 µg/L (monthly avg.) <u>Tetrachloroethene</u> - 21 µg/L (daily), 15 µg/L (monthly avg.) <u>Vinyl chloride</u> - 18 µg/L (daily), 11 µg/L (monthly avg.) <u>Cyanide</u> - 65 µg/L (daily), 50 µg/L (monthly avg.) <u>Iron (total/dissolved)</u> - N/A <u>Manganese (total/dissolved)</u> - N/A <u>Total phenols</u> - N/A <u>Arsenic (total)</u> - 105 µg/L <u>Arsenic (inorganic)</u> - N/A	Outfall 001: That portion of the Willamette River extending across the river, 10 meters downstream, and 5 meters upstream.	Outfall 001: That portion of the Willamette River extending 1 meter across the river, 1 meter downstream, and 0.5 meter upstream.
115018	102880	The Pinnacle Condominium Owners' Association	Outfall 001: <u>pH</u> - 6.5-8.5	Outfall 001: <u>Copper</u> - 82.8 µg/L <u>Lead</u> - 22.9 µg/L <u>Mercury</u> - 0.7 µg/L <u>Silver</u> - 7.2 µg/L <u>Zinc</u> - 721 µg/L <u>Iron (total/dissolved)</u> - N/A <u>TPH</u> - 1,000 µg/L <u>BTEX</u> - 250 µg/L <u>Benzene</u> - 25 µg/L <u>Arsenic (total)</u> - 27.7 µg/L <u>Arsenic (inorganic)</u> - N/A <u>Manganese (total/dissolved)</u> - N/A <u>Cyanide</u> - N/A <u>Total phenols</u> - N/A	Outfall 001: The mixing zone will be a strip measuring 2 meters out from the end of the discharge pipe and 2 meters downstream.	Outfall 001: The ZID will be a strip measuring 0.4 meter out from the end of the discharge pipe and 0.4 meter downstream.

Notes:
^a DEQ Wastewater permits database accessed 5/20/2009 (<http://www.deq.state.or.us/wq/sisdata/facilitycriteria.asp>)
^b Values listed are daily maximums unless stated otherwise.

BOD - biological oxygen demand
BTEX - benzene, toluene, ethylbenzene, and total xylenes
CBWTP - Columbia Boulevard Wastewater Treatment Plant
CSO - combined sewer overflow
DO - dissolved oxygen
N/A - information not available
NPDES - National Pollutant Discharge Elimination System
PAH - polycyclic aromatic hydrocarbon
RMZ - Regulatory Mixing Zone
SSO - sanitary sewer overflow
TDS - total dissolved solids
TSS - total suspended solids
ZID - Zone of Immediate Dilution

Table 4.3-2. 1974 City Identification of Industrial Users in Portland Harbor and Wastewater Discharge Location.

Facility/Address	RM ^a	Pretreatment	Wastewater Characteristics					Discharge 1,000 gal/day	CSO Outfall
			pH	mg/L					
				BOD	SS	n-hex	Chemical		

Facilities Discharging Industrial Wastewater to a Municipal Sanitary System in 1974									
H.B. FullerCo 10425 N Rivergate	2.6E		8	988	1842			9	NA
Consolidated Metco Inc. 13940 N Rivergate	2.8E	Chem treatment	6.5				Zn = 5.0	27	NA
Palmco 12025 N Burgard	3.6E	Closed system except gravity separator for truck wash area	7.2	1920	279			10	NA
Container Corp of America 12005 N Burgard	4.0E		6.8	760	590			35	NA
Borden Chemical 10915 N Lombard	4.5E		9.8	810	860			6	NA
Port of Portland 11000 N Lombard	4.9E							143	NA
Koppers Co 7540 NW St Helens Rd	6.3W							58	NA
Bird and Son, Inc. 6350 NW Front	7.5W		7.1	400	457			111	NA
Shell Oil Co 5800 NW St. Helens Rd	7.6W	Oil-water separation						129	NA
Standard Oil Co 5570 NW St. Helens Rd	7.7W	Oil-water separation				266		167	NA
Union Oil Co 5300 NW St Helens	7.8W	Oil-water separator						250	NA
Flint Kote 5700 NW Front	8.0W		7.8	100	40			25	NA
Chevron Asphalt 5501 NW Front	8.1W	Oil-water separation						177	NA

Table 4.3-2. 1974 City Identification of Industrial Users in Portland Harbor and Wastewater Discharge Location.

Facility/Address	RM ^a	Pretreatment	Wastewater Characteristics				Discharge 1,000 gal/day	CSO Outfall
			pH	mg/L				
				BOD	SS	n-hex Chemical		
Freightliner Corp. 6936 N Fathom Ave	8.3E						97	NA
Port of Portland 5200 N Lagoon Ave	8.5E	Ballast water treatment chem/ settling					203	NA
Port of Portland 6005 N Channel Ave	8.5E						187	NA
Pacific Chain 4200 NW Yeon	8.7W						143	NA
Western Farm Assoc. 6135 N Basin Ave	8.8E	Settling, vibrating screens	7.4	660	165		383	NA
McCloskey Varnish 4155 NW Yeon	8.8W		6.7	7600	20		<<1	NA
Gunderson Bros 4700 NW Front	9.1W						188	NA
Volney Felt Co 3750 NW Yeon	9.1W	Gravity separator	6.6	750	766		112	NA
Columbia-American Plating 3003 NW 35th Ave	9.2W	New point source completion Jan. 1975						NA
Reimann and McKenney 3000 NW St Helens	9.2W	Air flotation w/chemical feed	9.2	880	510	695	25	NA
Canteen Company 2001 N Lagoon	9.5E		7.6	528	128		5	NA
Hercules Powder 3366 NW Yeon	9.5W	Oil-water separation air flotation, pH adjust	7.6	360	186	126	92	NA

Table 4.3-2. 1974 City Identification of Industrial Users in Portland Harbor and Wastewater Discharge Location.

Facility/Address	RM ^a	Pretreatment	Wastewater Characteristics				Discharge 1,000 gal/day	CSO Outfall
			pH	mg/L				
				BOD	SS	n-hex		
Fred Meyer (Dairy) 4950 N Basin	9.6E		6.4	1190	323		205	NA
Glidden - General Paint 2800 NW 31st	9.6W	Chem. precipitation Batch process	6.9	1580	420		2	NA
Richardson Ink Co 3529 NW Yeon Ave (address should be 3259)	9.7W		9	420	110		3	NA
Industrial Air Products 3255 NW 26th	9.8W		12.4				58	NA
Industrial Battery and Charge Inc. 3166 N Greeley	10.6E	none	3				0.1	NA
ZEHRUNG 2201 NW 20th	10.7W		7.1	192	48		20	NA
City Galvanizers Co 820 N Russell	11.2E	Proposed chemical treatment	5		31	Zn = 30.0	2	NA
<i>Facilities Discharging Industrial Wastewater to a Municipal CSO System (That Could Overflow to River) in 1974</i>								
Galvanizers Co 2406 NW 30th Ave	9.8W	Proposed chemical treatment	7		456	Zn = 10.0 Ni = 0.5	7	17
Schmitt Steel 2407 NW 28th Ave	9.8W						50	17
Boysen Paint 2100 NW 22nd	10.4W		8	100	156		3	15
Chase Bag Co 2550 NW Nicolai	10.4W		8.9	536	84		2	15
Electric Steel Foundry 2141 NW 25th Ave	10.4W						1020	15
Electric Steel Foundry 2760 NW Yeon	10.4W						215	15

Table 4.3-2. 1974 City Identification of Industrial Users in Portland Harbor and Wastewater Discharge Location.

Facility/Address	RM ^a	Pretreatment	Wastewater Characteristics					Discharge 1,000 gal/day	CSO Outfall
			pH	mg/L					
				BOD	SS	n-hex	Chemical		
Griffith Rubber Mills 2439 NW 22nd Ave	10.4W							108	15
Imperial Paint 2315 NW Yeon (address should be 2526)	10.4W		8.2	250	4240			1	15
Rentex NW Industrial 1848 NW 23rd Ave	10.4W	Screening gravity separation	10.5	1014	725	632		83	15
Willamette Iron and Steel 2840 NW Front	10.4W						Pb = 4.0	598	15
Consolidated Freightway 2028 NW Quimby St	11.1W	Oil-water separator under design				154		100	12
Pacific Steel Foundry 1979 NW Vaughn Street	11.2W							92	13
American Plating Co 2751 N Williams Ave	11.4E		3.6		17		Ci = 1.0 Cu < 1.0 Cn = 3.3 Zn = 0.8	15	44A
Crawford and Doherty 2531 NW 28th Ave	11.4W							90	11
Opera House Laundry 1804 NW Northrop	11.4W		10.7	300	32			1	11
Pancich Fish Company 300 NW 13th Ave	11.4W		7.0	80	92			6	11
Portland Bolt and Manufacturing 930 NW 14th Ave	11.4W	None	6		50		Zn = 20.0 Cr = 10.0	4	11
Centennial Mills 1362 NW Front Ave	12.4W		6.0	7942	7342			196	9

Table 4.3-2. 1974 City Identification of Industrial Users in Portland Harbor and Wastewater Discharge Location.

Facility/Address	RM ^a	Pretreatment	Wastewater Characteristics					Discharge 1,000 gal/day	CSO Outfall	
			pH	mg/L						
				BOD	SS	n-hex	Chemical			
<i>Facilities Not Discharging Industrial Wastewater to a Municipal System in 1974</i>										
Oregon Steel Mills 14400 N Rivergate Blvd	2.3E	Domestic only to sewer						168 (water use)	NA	
NW Natural Gas Co 7900 NW St Helens Rd	6.2W	Domestic only to sewer						336	NA	
Pennwalt Chemical Co 6400 NW Yeon	7.3W	Domestic only to sewer	8.3	200	320				NA	
Rhodia, Inc 6200 NW St. Helens	7.4W	Industrial waste not discharged to City system							NA	
Oregon Steel Mills 5250 NW Front	8.2W	Domestic only to sewer						144 (water use)	NA	
Precision Equipment Inc 1627 NW Savier	11.0W	Hauled to waste disposal site						3	NA	
Wagstaff Batteries Mfg. Co. 2124 N Williams	11.5E	Use dry wells for industrial waste						0.4	NA	

Source: City of Portland Columbia Blvd. WWTP NPDES Permit Report Condition G-7 - Industrial Users. September 30, 1974

Notes:

^a River mile of site, except when facility discharges to a combined system, the river mile for outfall overflow is shown.

BOD - biological oxygen demand

CSO - combined sewer overflow

NA - not applicable

RM - river mile

SS - suspended sediment

Table 4.3-3. 1967 OSSA Identification of Major Sources of Industrial Wastes in Portland Harbor.

Source	RM	Type of Waste	Present Treatment	Sanitary Waste Disposal	Needed Action
Union Pacific Railway	11.1	Oily water	Oil -water flotation unit, discharge to river	City	Continued surveillance
Gunderson Bros. Engr. Corp.	8.6	Acetylene lime wastes	Lime retention in sump, thence to river	Septic tank, cesspools	Connect to city sewer when available
Reimann & McKenney	8.5	Caustic waste	Baffled sump (discharges via Guilds Lake sewer)	Discharge to river	Interception planned by city by December 1967
Chevron Asphalt Co.	8.0	Heavy oils and asphalts	Sedimentation tank (discharge via NW 54th Ave. sewer)	City	Interceptor sewer under construction
Standard Oil Co. [Willbridge]	7.7	Oil and caustic wastes	Sedimentation tank (discharges to Willamette River via Doane Avenue)	Doane Ave. sewer	To be intercepted by city sewer (under construction)
Union Oil Co. [Willbridge]	7.7	Oil wastes	Sedimentation tank (discharges to Willamette River via Doane Avenue)	Septic tank, drainfield	To be intercepted by city sewer (under construction)
Shell Oil Company [Willbridge]	7.6	Oil wastes	Oil water separation thence to river via Balboa Creek	Septic tank, cesspool	To be intercepted by city sewer (under construction)
Pabco	7.6	Felt paper wastes	Save all	Septic tank, drainfield	City constructing sewers in area
Pennsalt [Arkema]	7.4	Some salt waste in cooling water	Continuous monitoring	Septic tank, drainfield	Connect domestic wastes to city sewer when sewer is completed
McCormick & Baxter	7.2	Creosote	Discharge to river	Septic tank, drainfield	Connect domestic wastes to city sewer when sewer is completed
Air Reduction (Pacific) Company [Kittridge]	7.0	Carbide wastes	Discharge to Doane Lake, seepage to river	Septic tank, drainfield	Connect domestic wastes to city sewer when sewer is completed
Chipman Chemical Co. [Rhone Poulenc]	7.0	Chlorophenolic	In-plant control and treatment	Septic tank, drainfield	Treated effluent and sewage wastes to city sewer when sewer is completed
MP Kirk & Sons [Gould]	7.0	Battery acid	Discharge to Doane Lake, seepage to river	Septic tank, drainfield	Connection of domestic wastes to city sewer when completed

Table 4.3-3. 1967 OSSA Identification of Major Sources of Industrial Wastes in Portland Harbor.

Source	RM	Type of Waste	Present Treatment	Sanitary Waste Disposal	Needed Action
Cargill, Inc.	4.7	Grain wash water	Discharge to river	To the river	Connect to city sewer as soon as facilities available
Dulien Steel Complex	4.5	Domestic sewage	None	To the river	Connect domestic wastes to city in 1967-68
Mobil Oil Co. [ExxonMobil]	4.4	Oily water	Oil-water separator to storm sewer to river	Septic tank, storm sewer	Connect domestic wastes to city sewer when sewer is completed
Richfield Oil Co. [ARCO]	4.3	Oily water	Oil-water separator to river (occasional)	Septic tank to river	Connect domestic wastes to city sewer when sewer is completed
Linnton Plywood	4.2	Glue wastes	Discharge to river	Septic tank, effluent to river	Connect domestic waste and glue wastes to city sewer
Tidewater Oil Co.	4.0	Oily water and hot laundry wastes	Discharge to river	Septic tank, drainfield	Connect to city sewer

Source: OSSA. 1967. Implementation and Enforcement Plan for the Public Waters of the State of Oregon, Oregon State Sanitary Authority, Portland, OR. May 1967.

Notes:

OSSA - Oregon State Sanitary Authority

Table 4.3-4. Active NPDES Permitted Discharges to the Portland Harbor Study Area.^a

File No.	Facility	Permit		River Mile ^b
		Category	Type	
Major NPDES - Individual Permit				
108015	City of Portland, Port of Portland, Multnomah County - Municipal Stormwater Permit	STM	NPDES-DOM-MS4-1	multiple
93450	Wacker Siltronic Corporation	IND	NPDES-IW-B14	6.5
70725	Columbia Boulevard Wastewater Treatment Plant (CBWTP)	STM	NPDES-DOM-A1	multiple ^c
Minor NPDES - Individual Permit				
64905	Evraz Oregon Steel Mills, Inc.	IND	NPDES-IW-B08	2.3
3690	Ash Grove Cement	IND	NPDES-IW-B16	2.8
100025	Kinder Morgan/Portland Bulk Terminal 4	IND	NPDES-IW-B15	4.6
108460	Columbia River Sand & Gravel - Linnton Dist. Facility	IND	NPDES-IW-B16	4.7
108460	Columbia River Sand & Gravel - Linnton Dist. Facility	IND	NPDES-IW-B15	4.8
47430	Koppers, Inc.	IND	NPDES-IW-B15	6.0
74995	Starlink Logistics	IND	NPDES-IW-B15	7.2
68471	Arkema, Inc. (closed, now stormwater only)	IND	NPDES-IW-B16	7.3
70596	Vigor Industrial LLC (aka Cascade General, Inc.)	IND	NPDES-IW-B15	8.3
100517	Univar USA	IND	NPDES-IW-B15	8.9
115018	The Pinnacle Condominiums Owners' Association	IND	NPDES-IW-B16	11.4
General Permits				
65589	Owens Corning (Corp.)	IND	GEN01	3.7
106458	Hexion Specialty (aka Borden Chemicals)	IND	GEN01	4.5
62231	Northwest Natural Gas Company	IND	GEN01	6.0
8550	GS Roofing Products Company, Inc.	IND	GEN01	7.4
110322	Oregon Transfer Co.	IND	GEN01	9.0
101321	Freightliner Truck Manufacturing Plant 2 (TMP2)	IND	GEN01	9.2
102334	Sulzer Pumps	IND	GEN01	10.2
44571	Glacier Northwest, Inc.	IND	GEN01	11.1
65589	Owens Corning (Corp.)	IND	GEN05	3.7
54175	McCall Oil And Chemical Corporation	IND	GEN05	7.9
64905	Oregon Steel Mills	STM	GEN12Z	2.3
100415	J. R. Simplot Company - Rivergate Terminal	STM	GEN12Z	2.6
108101	Alder Creek Lumber Co., Inc.	STM	GEN12Z	2.8
109186	Time Oil Co. - NW Terminal	STM	GEN12Z	3.4
32876	Morse Bros. Linnton Terminal	STM	GEN12Z	3.5
109845	Jefferson Smurfit Corporation (U.S.)	STM	GEN12Z	3.6
111236	Portland Container Repair Corporation	STM	GEN12Z	3.6
65589	Owens Corning (Corp.)	STM	GEN12Z	3.7
108103	Schnitzer Steel Industries, Inc. - DBA	STM	GEN12C	3.9
108103	Schnitzer Steel Industries, Inc. - DBA	STM	GEN12Z	3.9
6739	Northwest Pipe Company	STM	GEN12Z	4.2
108460	Columbia River Sand & Gravel - Linnton Dist. Facility	STM	GEN12Z	4.7
4248	BP West Coast Products (ARCO)	STM	GEN12Z	4.8
113672	Toyota Logistics Services, Inc.	STM	GEN12Z	4.8
112017	Exxon Mobil Oil Corporation	STM	GEN12Z	5.0
112103	Olympic Pipe Line Co.	IND	GEN12Z	5.1
109938	Shore Terminals LLC	STM	GEN12Z	5.3
108394	USACE - US Government Moorings	STM	GEN12Z	6.0
111157	Pacific Terminal Services	IND	GEN12Z	6.2
93450	Siltronic Corporation	STM	GEN12Z	6.5

Table 4.3-4. Active NPDES Permitted Discharges to the Portland Harbor Study Area.^a

File No.	Facility	Permit		River Mile ^b
		Category	Type	
107922	Air Liquide (See Liquid Air File 50791)	STM	GEN12Z	7.3
110646	Metro Central Transfer Station	STM	GEN12Z	7.3
8550	GS Roofing Products Company, Inc.	STM	GEN12Z	7.4
107564	Chevron U.S.A. - Willbridge Transportation	STM	GEN12Z	7.6
100122	Chevron U.S.A. Inc. - Willbridge Distribution Center	IND	GEN12Z	7.7
107172	Brenntag Pacific Inc. (aka Quadra Chemicals Western Inc.)	STM	GEN12Z	7.8
90845	Conocophillips Company	STM	GEN12Z	7.8
54175	McCall Oil and Chemical Corporation	IND	GEN12Z	7.9
16055	Paramount Petroleum	STM	GEN12Z	8.0
104856	Tube Forgings of America, Inc.	STM	GEN12Z	8.1
100408	Western Star-Truck MFG (aka Freightliner TMP)	STM	GEN12Z	8.2
111878	RM Beverage Delaware, - Maletis Beverage	STM	GEN12Z	8.3
101536	United Parcel Service, Inc.	STM	GEN12Z	8.3
70596	Vigor Industrial LLC (aka Cascade General, Inc.)	STM	GEN12Z	8.3
104250	Columbia Distributing Company	STM	GEN12Z	8.5
114961	Greenway Recycling	STM	GEN12Z	8.6
107443	Roadway Express, Inc.	STM	GEN12Z	8.6
109872	Western Wire Works, Inc.	STM	GEN12Z	8.7
101620	Auto Truck Transport Corporation	STM	GEN12Z	8.7
87693	Equilon Enterprises L.L.C. (DBA)-Shell Oil Products	STM	GEN12Z	8.8
30386	Gunderson, Inc.	STM	GEN12Z	8.8
108730	HAI DBA Christenson Oil	STM	GEN12Z	8.8
111845	Becker Trucking, Inc. See File #109849	STM	GEN12Z	8.9
113286	Environmental Fibers International	STM	GEN12Z	8.9
103380	Pacific Rail Services	STM	GEN12Z	8.9
110272	Container Recovery, Inc.	STM	GEN12Z	9.0
100721	Tarr Acquisition LLC (Rudie Wilhelm Warehouse Co.)	STM	GEN12Z	9.1
103803	Owens Corning Corp.	STM	GEN12Z	9.1
107658	ABF Freight System, Inc.	STM	GEN12Z	9.1
100447	Carson Oil Co., Inc.	STM	GEN12Z	9.2
101321	Freightliner Truck Manufacturing Plant 2 (TMP)	STM	GEN12Z	9.2
111065	IMACC Corporation - Container Management Services	STM	GEN12Z	9.2
112482	Barrich, Inc. - MRP Services Inc.	STM	GEN12Z	9.2
109852	Portland Terminal Railroad Company	STM	GEN12Z	9.4
110778	Rose City Moving & Storage Company	STM	GEN12Z	9.5
108673	Fred Meyer Dairy Plant (Swan Island Dairy)	STM	GEN12Z	9.6
104892	Galvanizers Company	STM	GEN12Z	9.7
110199	Federal Express Corporation	STM	GEN12Z	9.8
109851	Peninsula Truck Lines, Inc.	STM	GEN12Z	9.9
107985	Stevedoring Services of America, Inc.	STM	GEN12Z	10.0
104836	ESCO Corporation	STM	GEN12Z	10.1
107213	Ash Grove Cement	STM	GEN12Z	10.1
110258	McCracken Motor Freight, Inc.	STM	GEN12Z	10.1
114024	Port of Portland Terminal 2	STM	GEN12Z	9.7
107179	Calbag Metals Co.	STM	GEN12Z	10.2
102334	Sulzer Pumps	STM	GEN12Z	10.2
107655	Savage Services Corp.	STM	GEN12Z	10.3
111331	Sakrete of the Pacific Northwest	STM	GEN12Z	10.9

Table 4.3-4. Active NPDES Permitted Discharges to the Portland Harbor Study Area.^a

File No.	Facility	Permit		River Mile ^b
		Category	Type	
111356	CLD Pacific Grain, LLC	STM	GEN12Z	11.4
100571	Tarr Acquisition, LLC	STM	GEN12Z	11.2
109826	USDOT; National Railroad Passenger Corp. (AMTRAK)	STM	GEN12Z	11.6
119612	Harris Rebar Portland Facility	STM	GEN12Z	9.2
118681	IFCO Systems	STM	GEN12Z	4.6
118394	KBB Precast Plant	STM	GEN12Z	10.5
70613	Kinder Morgan Bulk Terminal 5	STM	GEN12Z	1.4
32300	Kinder Morgan Linnton Terminal	STM	GEN12Z	4.1
80841	Kinder Morgan Liquids Terminal LLC	STM	GEN12Z	7.5
119308	RB Recycling, Inc.	STM	GEN12Z	3.6
120521	SAIA Motor Freight	STM	GEN12Z	9.0
119241	SiC Processing USA LLC	STM	GEN12Z	8.4
	TENEX	STM	GEN12Z	1.2
120475	TP Freight	STM	GEN12Z	8.8
102121	Union Pacific Railroad Albina Yard	STM	GEN12Z	10.8
107609	United States Postal Service	STM	GEN12Z	11.6
109186	Time Oil Co. - NW Terminal	STM	GEN12C	3.4
105307	Jacobsen & Co. Inc., K.F.	STM	GEN12A	11.0
4248	BP West Coast Products (ARCO)	IND	GEN15A	4.8
32300	Kinder Morgan Linnton Terminal	IND	GEN15A	4.1
87693	Equilon Enterprises L.L.C. (DBA)-Shell Oil Products	IND	GEN15A	8.8
110908	Hoyt Street Properties, LLC	IND	GEN15A	11.6

Notes:

^a River miles were determined by Integral GIS based on City-provided GIS layers.

^b DEQ Wastewater permits database accessed February 2011 (<http://www.deq.state.or.us/wq/sisdata/facilitycriteria.asp>)

^c Discharges from the CBWTP are directed to the Columbia River. The CBWTP also covers CSO and SSO discharges to the Willamette River

CBWTP - Columbia Boulevard Wastewater Treatment Plant

CSO - combined sewer overflow

DEQ - Oregon Department of Environmental Quality

GEN - general

GIS - geographical information system

IND - industrial

NPDES - National Pollutant Discharge Elimination System

ODOT - Oregon Department of Transportation

SSO - sanitary sewer overflow

STM - municipal stormwater

USACE - U.S. Army Corps of Engineers

USDOT - U.S. Department of Transportation

Definitions:

GEN01 - Cooling water/heat pumps

GEN05 - Boiler blowdown

GEN12Z - Industrial stormwater

GEN12A - Stormwater: Sand, gravel and other non-metallic mining

GEN12C - Stormwater: Construction activities - 1 acre or more

GEN15A - Tank cleanups and treated groundwater

NPDES MS4 - Municipal Stormwater Permit

NPDES-IW-B08 - Primary smelting and/or refining - Ferrous and non-ferrous metals not elsewhere classified above

NPDES-IW-B14 - Facilities not elsewhere classified which dispose of process wastewater (includes remediated groundwater) - Tier 1 sources

NPDES-IW-B15 - Facilities not elsewhere classified which dispose of process wastewater (includes remediated groundwater)

NPDES-IW-B16 - Facilities not elsewhere classified which dispose of non-process wastewaters

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Evraz Oregon Steel Mills #141	2.2	E	Current: Manufacturing of carbon steel coils and plates. Pipe production capabilities are currently being held.	2/22/2007	Diesel oil	Unknown	Storm drain, then to river	Sheen observed on puddle of water. Absorbent materials used to clean up sheen and boomed nearby catch basin.
				11/22/2006	Unknown oil	Unknown	Storm drain/outfall	Sheen observed at outfall 001 that originated from vehicle drippings.
				12/28/2005	Lubricating oil	Unknown	Storm drain	Material released from several maintenance pick-up trucks leaking oil around parking log. Heavy rain later washed material into nearby storm drain.
				2/4/2000	Hydraulic fluid	1-2 gal	Storm drain, then to river	
				1/14/1998	Unknown oil	Unknown	Outfall to river	Unknown sheen coming from outfall, 10 ft x 800 ft.
				12/22/1997	Hydraulic fluid	Some of (~15 gal) 40-70 gal	Catch basin/river	
				7/1/1994	Unknown oil	Unknown	River	Explosion in gas plant resulting in sheen in storm drain.
				3/28/1994	Crude oil	Unknown	River	M/V Overseas Chicago slopped oil off deck of the ship.
				4/29/1945	Oil	Unknown	River	Transfer pipe from vessels to sump was observed to be leaking badly (prior to EOSM ownership).
South Rivergate Industrial Park #2980	2.5	E	Current: JR Simplot - storage and distribution of urea and anhydrous ammonia; Union Chemical - manufacturer of adhesives and glues; Ash Grove Cement - manufacturer of calcium oxide; POP/Ft James - distribution of paper products; Douglas Walters/T&G Trucking.	12/6/2010	Unknown	Unknown	River	Leak from shaft of propeller of vessel Blue Water Shipping M/V B INDONESIA due to unknown reasons. Dock facility at Ash Grove facility is creating a sheen.
				4/10/2006	Unknown	Unknown	River	Occurred at JR Simplot
				1/12/2006	Hydraulic oil	1 quart	River	Occurred at JR Simplot
				4/18/2004	Tar	Unknown	River	Occurred at JR Simplot
				1/23/2004	Hydraulic oil	4 gal	River	During repairs of unmanned barge there was a spill of hydraulic oil into river at Ash Grove Rivergate.
				9/28/2002	Anhydrous ammonia	Unknown	River	Occurred at JR Simplot
				5/29/2001	Granular urea	500 lb	Dock, ship deck, river	Occurred at JR Simplot
				1/15/2001	Conveyor residual lube oil into river (during maintenance of conveyor)	Unknown	River	Occurred at JR Simplot
				12/28/2000	Urea	500 lbs	River	Urea spilled during offloading from a ship.
				5/5/1998	500- by 50-ft sheen	Unknown	River	Occurred at JR Simplot
				11/16/1999	Sheen on river	Not available	River	Occurred at JR Simplot
				4/13/1998	Urea	1,000-1,600 lb	River	Occurred at JR Simplot
				1/18/1994	Hydraulic oil	Unknown	River	M/V Shiokaze hydraulic valve packing malfunctioned resulting in a release.
Premier Edible Oils #2013	3.6	E	Current: None; Historical: Aboveground oil storage, manufacturing, packaging, and distribution of chemicals, metals, and metal products, edible oil processing and storage facility.	1988	Edible oil	20-50 gal	GAL	No spills indicated in DEQ ERIS database, spill reported in CSM.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Noncontiguous Burgard Industrial Park Properties #none	3.7	E	Current: Boydston Metal Works - automotive trailer manufacturing and automotive parts storage; Morgan CFS - container unloaded (lumber and building materials); Northwest Pipe - no manufacturing, storage; Schnitzer Steel Remnant - storage; Historical: WWII shipyard.	9/2/2003	Diesel	10 gal	Barge deck and river	
				11/18/2003	Hydraulic fluid	<1 gal	International Slip Waterway	
				3/29/2001	Oily water	Unknown	International Slip Waterway	
				5/1/1981	Transformer fluids containing PCBs	Unknown	Upper and lower decks and bilge of ship	
Schnitzer-Calbag #2355	4	E	Current: Metals recycling, truck maintenance and repair, warehousing; Historical: Ship construction/shipyard activities (1945-1972, Oregon Shipbuilding), metals recycling, truck maintenance and repair, warehousing; upland log storage and log rafting.	2/22/2010	No. 2-D Fuel oil	Unknown	River	Personnel fueling a generator on the deck of small work barge spilled diesel fuel. A small amount was released to the water causing a sheen. PRP listed as Vigor Industrial.
				2/11/2010	Unknown oil sheen	Unknown	River	Unknown sheen in water near vessel at Berth 305.
				12/30/2009	Hydraulic oil	0.5 gal	River	Sheen in water caused by worker unplugging a scupper on the ITB BALTIMORE causing sheen in water. Vigor Industrial reported 0.5 gal to river. Booms and pads applied.
				12/15/2009	Hydraulic oil	Unknown	Storm drain	Hydraulic line burst on dirt sorter and discharge material into storm drain that leads to river.
				10/21/2009	Motor oil	Unknown	River	An air compressor on deck of M/V YUKON had a line fail causing a spill of motor oil at Berth 313.
				10/16/2009	Gasoline	2 gal	International Slip Waterway	Sinking of boom boat. 2 gallons released from motor into water. 20' boom boat got caught under the dock and sunk due to the tide coming in. Approximately 2 gallons of fuel was lost. Coast guard called. The boat was taken out of the Willamette by crane. Schnitzer says the fuel was non recoverable.
				1/8/2009	Hydraulic oil	Unknown	River	Release of oil from shiploading container crane due to hydraulic line bursting.
				11/12/2008	Unknown oil sheen	Unknown	River	Unknown sheen observed at dock at RM 3.4.
				8/8/2008	Motor oil	Unknown	River	Oil released from barge due to left over fuel in crushed cars leaking onto barge and into river.
				3/17/2008	Unknown oil	Unknown	River	Vehicle dropped in water due to crane grabbing loose piece of car, causing a small sheen.
				12/20/2007	Scrap car body residuals	2-5 gal	River	Scrap car on barge fell into river due to operator error and resulted in sheen on water. 2-5 gallons of oil released during scrap car transfer.
				11/11/2007	Oil	1 gal	International Slip Waterway	Discharged from crushed automobile mistakenly dropped in Slip.
				11/30/2004	Unknown oil	Unknown	River	Unknown sheen observed in river at International Terminal.
				11/18/2003	Hydraulic oil	<1 gal	River	
				9/2/2003	Diesel	10 gal	River	
				12/28/2002	Hydraulic oil	10-15 gal	River	Spill traced to Schnitzer facility, cause not indicated.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Schnitzer-Calbag #2355				3/29/2001	Oily water	Unknown	International Slip Waterway	
				5/9/2000	No. 2-D Fuel oil	2 gal	River	Spill due to open valve on facility crane barge.
				2/15/2000	Unknown oil	Unknown	River	Unknown sheen observed within slip at the dock. Suspect sheen originated from M/V WATTE HELFA.
				10/13/1998	Hydraulic oil	Unknown	River	Heavy piece of equipment broke hydraulic hose on dock.
				2/17/1998	Unknown oil	Unknown	River	Unknown sheen milky in color, dark in spots observed 100 ft x 100 ft.
				10/28/1997	Unknown sheen	Unknown	River	Unknown rainbow sheen observed, 75 sq ft.
				7/9/1997	Oil/water mixture	Unknown	River	Released via storm drain during fire fighting activities to extinguish automobile bodies which caught fire.
				5/1/1981	Transformer fluids containing PCBs	Unknown	Upper and lower decks and bilge of ship	
Port of Portland Terminal 4, Slip 1 # 2356	4.3	E	Current: Bulk liquid storage, flour milling and soda ash handling. Historical: Grain storage, cold storage, liquid storage, flour milling, container food freight, break-bulk berth handling, fire boat moorage, and importing ore and ore concentrates.	10/3/2008	Unknown oil sheen	Unknown	River	Unknown sheen observed coming from Outfall #1.
				7/23/2007	Unknown oil sheen	Unknown	River	Unknown sheen observed at Berth 415.
				7/8/2005	Crude oil	Unknown	River	MSO PORTLAND reported release of crude oil from a barge due to unknown causes.
				9/24/2004	Unknown oil	Unknown	River	Unknown sheen observed in river at Terminal 4.
				6/24/2004	Unknown oil	Unknown	River	Unknown sheen observed in river at Terminal 4.
				8/10/2003	Unknown oil	Unknown	River	Unknown sheen observed in river at Terminal 4.
				4/8/2001	Industrial fuel oil, ship bunker or intermediate fuel oil	10 gal	River	Transversal shipping ship leaking intermediate fuel oil through cracks in hull at Terminal 4.
				9/25/1993	Hydraulic oil	0.5 gal	River	Hydraulic hose failure originating at Cargill facility. Cargill and Riedel Environmental conducted cleanup.
				10/8/1984	Oil	2-5 gal	River	On October 8, 1984, an oil spill was observed at Berth 405. Cargill reported that 2 to 5 gallons of gear grease had spilled out of a bucket by the grain hopper on Pier 1. Riedel Environmental responded to clean up the spill.
				3/20/1972	Grain	Unknown	River	On March 20, 1972, according to a Coast Guard report, Cargill released grain into the Willamette River at Pier 1.
				12/6/1971	Bauxite	Unknown	River	On December 6, 1971, according to a Coast Guard report, a release of bauxite occurred from Portland Stevedoring unloading operations at Pier 2.
				10/8/2010	Gear oil	Unknown	River	Leak from fire pump on dock creating sheen on water.
Kinder Morgan Liquids Terminal - Linnton #1096	4.4	W	Bulk petroleum facility since installation of fuel ASTs in 1918.	1/31/2008	Aer-o-lite 3% (fire fighting foam)	Unknown	River	Release of foam from oil water separator due to separator being overfilled due to rain.
				1/14/2002	Unknown oil	Unknown	River	Sheen of unknown origin observed.
				8/30/2001	Unknown oil	Unknown	River	Unknown sheen observed in river at Kinder Morgan facility.
				6/14/1999	Potash	5-7 tons	River	
				10/3/1998	Unleaded gasoline	200 gal	River	Dock line broke on In-City VOYAGER barge.
				3/3/1998	Potash	<200 lbs	Vessel-Barge	
				2/12/1991	Diesel Oil	Unknown	River	Operator error (overfilling).

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Port of Portland Terminal 4, Slip 3 # 272	4.6	E	Current: Loading soda ash at docks; Historical: Loading soda ash, unloading pencil pitch, storage and unloading of bulk oil, import and export of ore and concentrate, unloading diesel, No. 6 fuel, and Bunker C oil and transferring via pipeline.	1/23/2005	2-D Fuel oil	10 gal	River	Approximately 10 gallons of 2-D fuel oil was released from a crane barge due to an overfill with a piece of equipment; cleanup was initiated with booms and absorbents.
				8/28/1997	Oil	Unknown	Unknown	While dismantling the dock at Berth 412, an oil pipe line was cut and some product in the line spilled out. Foss Environmental cleaned up the spill.
				6/18/1997	Pencil pitch	200-1,000 lb	River	Approximately 200-1,000 lb of pencil pitch entered Slip 3 after an operator error on the Dravo.
				9/25/1996	Pencil pitch	Unknown	River	Pencil pitch is an identified contaminant source in the upland soils and in-water sediments of Slip 3, and Hall-Buck has been cited by DEQ for numerous violations for pencil pitch handling. This is one of the documented releases of pencil pitch into the air, into the terminal, and/or into the river.
				7/30/1996	Pencil pitch	Unknown	River	
				5/13/1996	Oil	Unknown	River	On May 13, 1996, a thin sheen was observed in the river near Berth 411 by Port and Hall-Buck employees. It appeared that the source was from one of two operations: a broken-down crane the Port had on the dock may have leaked oil during servicing, or Hall-Buck operations. It is unclear who was the responsible party. Both the DEQ and the U.S. Coast Guard were notified.
				5/28/1993	Pencil pitch	Unknown	River	Oil was observed on the water in Slip 3. The oil was being discharged with the treated water from the oil/water separator. Foss Environmental Services responded to clean up the oil in the boom area.
				4/16/1993	Oil	Unknown	River	
				12/25/1992	Fuel and lube oils	10 gal	River	Approximately 10 gallons of a mixture of weathered light fuel and lube oils seeped into the Willamette River from soil at the east end of Berth 411. Floating booms were placed to contain further discharge.
				12/00/1992	Oil	Minor amount	River	The U.S. Coast Guard observed a minor oil release to the Willamette River at Slip 3. The Port contracted Century West to initiate the abatement of the migrating oil seep.
				3/2/1992	Pencil pitch	Unknown	River	Jones Oregon Stevedoring Co. complained of uncontrolled pencil pitch dust generated by unloading of MV Agness on February 25.
				2/25/1992	Pencil pitch	Unknown	River	
				7/2/1991	Oil	Unknown	River	The U.S. Coast Guard observed a slight sheen at the head of slip that appeared to be related to the seep at Berth 412.
				6/2/1991	Oil	Unknown	River	Jones Oregon Stevedoring reported oil leaking out of bank at Slip 3.
				1/5/1990	Pencil pitch	Unknown	River	
				3/15/1988	Pencil pitch	Unknown	River	

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Port of Portland Terminal 4, Slip 3 # 272				10/16/1987	Pencil pitch	Unknown	River	October 16, 1987, when pencil pitch was spilled into the Willamette while Jones was unloading the vessel PARKGRACHT.
				12/28/1971	Oil	Unknown	River	Portland Harbor Police observed slightly colored to brightly colored oil slick on the water between Piers 4 and 5. The slick covered an area approximately 500 ft wide and 1,000 ft long. The oil was heaviest under the southeast end of Pier 5. Employees of Union Pacific Railroad were attempting to clean up the oil with booms and other absorbent materials.
				12/19/1971	Grain	Unknown	River	On December 19, 1971, according to a Coast Guard report, Jones Stevedoring and Cargill released grain into the Willamette River at Pier 1.
				1971	Oil seep	Unknown	River	1971, month/day unknown. Oil seep into Willamette River from southern bank of Slip 3.
				12/15/1970	Oil	Unknown	River	Five oil leaks discovered in original Union Pacific pipeline. December 15, 1970, leak occurred during Union Pacific's pipeline repairs when oil flowed through the sand and escaped into the water.
Linnton Plywood Association #2373	4.7	W	Linnton Plywood - sawmill and lumber company, plywood manufacturing, and warehousing in plywood building. CRSG - sand barging and distribution.	2/17/1995	Pale oil	20-55 gal	Storm drain, sheen on river	
ARCO #1528	4.9	W	Current: Petroleum storage and distribution; Historical: Petroleum storage and distribution, foamite plant, toy manufacturing lumber company.	1/16/2006	Unknown	Unknown	River	Orphan sheen discovered around docks of BP ARCO, 900-ft containment boom deployed to contain sheen.
				10/31/2005	Diesel	15,000 spilled (at least 1,000 gal to river)	Ground/river	
				1995, 2003, 2004	Reported sheen on water inside boomed area (multiple separate incidences)			
				5/14/2000	Crude oil	Sheen	Released from ship, created sheen on river	
				6/9/2000	Hydraulic oil	1 barrel	Release from ship to river	
				8/13/1997	#2 Diesel	25,000 gal, unknown total amount to river	Ground/river	
				5/4/1995	Automotive gasoline	Unknown (up to 20 gal)	Released from leaking gasket onto soil then flowed to river	
				8/9/1995	Gasoline	2 gal	Discharge to river (equipment failure on dock)	
				4/23/1986	Crude oil	1 cup from ballast pipeline	From ballast pipeline to river	

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
POP - Terminal 4 (Auto Storage Facility) #172 #2642	5	E	Current: Unloading, storing and processing of new automobiles; Historical: Unloading, storing and processing of new automobiles, unloading of steel and export of lumber products on the northern third of the facility.	3/18/1985	Unknown oil	Unknown	Unknown	
Exxon Mobil #137	5.1	W	Petroleum storage and distribution.	1/20/2004	Oil residue	4 gal	River via outfall	25 ft out into the river spanning 50 ft on either side of the outfall. Cleanup conducted.
				5/4/2004	Oil	Not reported	River	
				3/20/1999	Gasoline	2 gal	River	Occurred from loading arm at Mobil dock.
ST Services/Shore Terminals #1989	5.3	W	Bulk petroleum storage and marine terminal.	6/15/2010	Hydraulic oil	1 gal	River	Removal of hydraulic cylinder cause release of oil into river. PRP listed as Nustar Energy.
				6/5/2010	3M Foam	Unknown	River	Discharge of material to river.
				1/20/2004	Other oil	Unknown	Fixed	Heavy film sheen in water coming from leaking oil water separator.
				8/11/2003	JP8 fuel	50-100 gal	River	SEA COAST barge off-loading JP-8, boomed.
				9/15/1999	Diesel fuel	50-100 gal	River	Release of fuel due to work on piping system.
				7/22/2010	Diesel oil	Unknown	River	Release of diesel fuel from vessel due to equipment failure
				7/21/2008	Unknown oil	1 gal	River	
Foss Maritime/Brix Marine #2364	5.5	W	Current: Marine vessel transportation services and maintenance; Historical: Above and tugboat service and fueling.	7/13/2008	Clarity oil	0.5 cup	River	Equipment failure.
				7/3/2008	Clarity oil	0.5 cup	River	Release from vessel to water due to overboard discharge turning on during maintenance.
				9/9/2004	Lube oil	Unknown	River	
				1995 - 2004	Fuel	<25 gal at a time	River	Small amounts of fuel (<25 gallons at a time) released into Willamette from maintenance activities, periodically from 1995 - 2004.
				6/7/2003	Diesel oil	1 pint	River	Tug JON BRIX released small amount of oil.
				4/21/2003	Hydraulic oil	Unknown	River	Pump failure at Foss facility.
				7/8/2002	No.2 Diesel fuel	5 gal	River	During refueling, glass valve not open all the way.
				7/8/2002	Fuel	5 gal	River	
				10/18/2000	Diesel oil	Unknown	River	M/V FIRE BOAT WILLIAM developed leak in diesel tank due to unknown causes. Spill occurred during refueling due to hole in gas tank - previous weld had failed.
				5/29/2000	Gear oil	2-3 cups	River	Discharged from tug JOSEPH T's bilge pump.
				2/7/2000	Diesel oil	Unknown	River	The material was released from the sounding tube on the tug LEWISTON due to unknown causes. Area was boomed and pads applied.
				12/15/1999	Fuel oil	17 gal	River	During refueling.
				11/11/1999	Diesel fuel	15-20 gal	River	During refueling.
				11/2/1999	Diesel fuel	1 gal	River	During refueling - result of improperly aligned valve.
				1/23/1999	Diesel fuel	1 gal	River	Discharged from tug SARA BRIX.
				12/23/1998	Bilge slop	5 gal	River	
				9/30/1998	Unknown oil	Unknown	River	Sheen observed. Sheen was 75 yds x 10 yds, blue in color.
				9/18/1998	Residual oil	Unknown	River	Released from Foss Barge 208 - washed overboard as result of heavy rains and clogged scuppers.

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Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Foss Maritime/Brix Marine #2364				5/31/1998	Diesel fuel	5 gal	River	Released from tug HOWARD OLSEN at Union Docks (Wilbridge Area to NW St. Helens Rd and NW Kittridge). 15 gallons recovered on deck, 5 gallons released to river.
				3/21/1998	Oil	5 gal	River	Released from tug FAIR WIND.
				1/12/1998	Oil	25 gal	River	Vessel bilge.
				1/12/1998	Diesel oil	5 gal	River	Separator line broke on a marine vessel.
				10/14/1997	Diesel oil	Unknown	River	Sheen observed around tug JIM MOORE
				9/2/1996	Diesel oil sheen	Unknown	River	Observed sheen around tug JIM MOORE.
				4/23/1996	Cable lube grease	Unknown	Storm drain	Released from dumpster. Two 5-gal drums thrown into dumpster, rain washed material from dumpster into nearby storm drain then to river.
				3/27/1996	Fuel oil	1 gal	River	Released from ship due to overfilling.
				1/24/1996	Oily waste	2.5 gal	River	Released from two separate incidents.
				10/16/1995	Diesel oil	Unknown	River	Crack in weld of hull of oil barge.
				7/15/1995	Oil	7 gal	River	
				6/19/1995	Oil	7 gal	River	
				1/18/1995	Diesel oil	Unknown	River	Material released from tugboat shaft.
				8/8/1994	Oil	3 gal	River	Released at Pacific Northern Terminal.
				8/6/1994	Lubricating oil	Unknown	River	Material leaked from barge deck to river.
				2/19/1994	Oil	Unknown	River	Released at Union Dock.
				1/20/1994	No 2-D fuel oil	Unknown	River	Soft patch failure on tugboat Clarkston.
				12/30/1993	Oil	Unknown	River	Sheen observed around tug.
				12/2/1993	Unknown oil	Unknown	River	Sheen observed, 50 ft x 200 ft silvery color.
				9/23/1993	Waste oil	1 gal	River	Tugboat T.J. Brix leaked while offloading. Equipment failure.
				4/21/1993	Diesel oil	Unknown	River	Small amount of product spilled into water when changing out fuel line on dock. Operator error.
				2/19/1993	Diesel	1 gal	River	
				2/18/1993	Black oil	1.5 gal	River	
				10/30/1992	Oil	Unknown	Not given	Willamette River - Columbia River. Sheen 75 ft x 10 ft.
				7/22/1992	Diesel Oil	Unknown	River	Material spilled when valve was being replaced. Operator error.
				7/10/1992	Diesel	1 gal	Not given	
				5/10/1992	Diesel Oil	50 gal	River	Released from hole in vessel.
				9/12/1991	Waste lubricating oil	3 gal	River	Released from tug to river. Tugboat, sump system overflowed.
Mar Com #2350	5.6	E	Current: None; Historical: shipbuilding and repair, sandblasting and painting, moorage.	2/23/2006	Unknown oil - air compressor	1 gal	River	
				2/23/2006	Discharge from pipe onto ground and subsequently to river	Unknown	River	
				7/11/2000	Diesel fuel	10-15 gal	River	Hose rupture.
				6/6/2000	Lanolite	Unknown, 50 x 100 ft sheen	River	
				10/15/1997	Oily/water materials	50 gal	River	Release from vessel.
				4/2/1997	Sandblasting paint/dust	Unknown	River	

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Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Mar Com #2350				4/1/1997	Oil-contaminated bilge water	20 gal	River	
				~1970s	Barge in shipway tipped over releasing fuel oil	Unknown	In shipway	The barge/fuel oil release was addressed at the time by excavating the saturated soils/material and placing it on the top of the bank adjacent to the spillway.
Marine Finance (Hendren Tow Boats) #2352	5.8	W	Current: Tugboat business, houseboat/sailboat construction; Historical: Above and metal salvage, moorage.	5/7/2003	Oily bilge water	1 gal	River	Tug pumped oil bilge water to river in vicinity of St Johns Bridge.
U.S. Moorings #1641	6	W	Government port, supply, repair facilities for dredge and other support vessels, warehousing facilities, fuel storage, motor pool garage and parking.	2/4/2008	Hydraulic oil	2 cups	River	Release of materials from hydraulic connection on side of ship due to residual hydraulic pressure. Absorbents applied.
				11/25/2006	Diesel oil	Unknown	River	Sheen observed in river during deballasting a forpeak tank. Release could be due to residual fuel in tank from a recently repaired small bulkhead fracture.
				2/6/2004	Hydraulic oil	Unknown	River	Workers were repairing hydraulic ram on board the Yaquina (ACOE dredge). During install of a new ram, and pulling plug on threaded fitting, approximately 1 pint of hydraulic oil sprayed out, partially landing on the deck and partially falling into the Willamette. Approximately 2 ounces was released into the Willamette. Workers used sorbent pads to pick up some sheen. After minimal cleanup, they could not find a sheen.
				1/15/2004	Hydraulic oil	10 gal	River	Equipment failure on dredging arm swell compensator on the starboard side of the vessel caused a 10-gallon hydraulic fluid spill to river. 50-ft by 300-ft sheen. Also trace amounts of hydraulic oil in 2004 and 2003.
				1/24/2003	Unprocessed/semi-processed oil	1 gal	River	Gray sheen observed inside oil boom at ACOE dock.
				11/24/1996	Oil slick of black fuel oil	Unknown	River	
				3/9/1996	Unknown oil	Unknown	River	
				12/29/1990	Sinking of anchor barge Raggy at its moorings - diesel / motor oil	350 gal (diesel)/ unknown (motor oil)	River	
				4/6/2010	Motor oil	1 cup	River	Equipment failure.
				7/11/2009	Diesel fuel No. 2-D	0.5 pint	River	Equipment failure.
USACE #1641	6.2	W	Maintenance port for USACE vessels.	1/28/2009	Misc. motor oil	2 tbsp	River	Equipment failure.
				11/18/2007	Hydraulic oil	Unknown	River	Release of hydraulic oil from a crane due to broken hydraulic line.
				9/26/2007	Unknown	Unknown	River	USACE advising of a large sheen which appears to be coming from a tugboat near their facility on the Willamette.
				3/10/2006	Gear Oil	9 gal	River	A bow thruster on a dredge ship was being tested when some oil was noticed leaking out of the tunnel.
				12/19/2000	Hydraulic oil	2 gal	River	Released from ESSAYON.
				9/30/1999	Lube oil	Unknown	River	150 sq ft sheen caused by spill from bow thruster on ESSAYON.
				2/19/1997	Hydraulic oil	20 gal	River	Released from bow thruster value on vessel YAQUINA.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
USACE #1641				9/23/1990	Hydraulic oil	10 gal	River	Released from ESSAYON.
				12/28/1989	Motor oil	1 gal	River	Released from ESSAYON while refueling.
Gasco #84	6.2	W	Current: Liquefied natural gas storage and distribution, solid and liquid coal tar pitch storage and distribution; northern portion - bulk fuel storage and distribution; Historic: Oil manufactured gas plant, coal tar formulation, storage and distribution.	6/18/2007	Unknown oil sheen	Unknown	River	Unknown sheen observed at Gasco dock.
				10/22/2003	Coal tar pitch	2 gal	River	KI operations.
				3/2000	Oily water	<25 gal at a time	River	NW Natural operations.
				10/17/1998	Industrial fuel oil, ship bunker or intermediate fuel oil	Unknown	River	MV CHESAPEAKE (Moremal Marine) blew fuel line while emptying the hose. Sprayed oil on dock and deck and some fell into river.
				1998	Fuel oil (PNO)	Few gallons	River	NW Natural operations.
				10/1/1969	coal tar pitch	Unknown	River	KI operations.
Willamette Cove #2066	6.7	E	Current: Vacant; Historical: Plywood manufacturing plant (west parcel), ship repair and maintenance (central parcel) - US Government facilitated during Great Depression and wars (WWI, WWII, and the Korean War), cooperage plant-manufactured wood vats.	None				8/16/01: 30-ft cabin cruiser partly submerged in Willamette River. Sheen noted when discovered.
Arkema	7.3	W	Current: None; Historical: Inorganic chemical manufacturing company from 1941 to 2001. Produced sodium chlorate and potassium chlorate, chlorine, sodium hydroxide, hydrogen gas, hydrochloric acid and DDT.	3/9/1995	Fuel oil	1 gal	Overwater dock	
				1/19/1986	Sodium dichromate or sodium chlorate	100-200 gal	Unknown	According to ERNS Database, Incident No. 43729, Atofina transfer line/leaking valve in line; estimated 100-200 gallons sodium dichromate released (affected media not reported). Incident report also notes sodium chlorate -- unclear which was released, not enough information provided.
Willbridge Terminals (Kinder Morgan, Shell, Conoco Phillips) #1549	7.5	W	Bulk petroleum storage since early 1900s.	4/16/2010	Unknown oil	Unknown	Outfall 22	Unknown sheen near Outfall 22.
				4/12/2010	Unknown oil	Unknown	Outfall 22	Unknown sheen near Outfall 22.
				3/19/2009	Unknown oil	Unknown	Outfall 22	Release of hydrocarbon from outfall due to unknown causes, resulting in sheen in river.
				1/14/2009	Unknown	Unknown	Outfall 22	Spill of materials from Outfall 22 causing sheen on river.
				1/12/2009	Unknown oil	Unknown	Outfall 22	Unknown sheen observed in containment area at Outfall 22 of the Conoco Phillips facility.
				1/5/2009	Unknown	Unknown	Outfall 22	Unknown sheen observed.
				11/13/2008	Unknown	Unknown	Outfall 22	Release into outfall system from stormwater pipe.
				10/25/2008	Diesel	0.5 cup	River	Release from inert gas generating system on tanker due to incomplete combustion. Release of diesel from tanker COLORADO VOYAGER at upper berth of Willbridge, resulted in 3 ft x 5 ft sheen.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Willbridge Terminals (Kinder Morgan, Shell, Conoco Phillips) #1549				10/10/2008	Unknown oil	Unknown	Outfall 22	Oil sheen observed in outfall system on Conoco Phillips property. Sheen bypassed oil water separator which came from either Conoco or Chevron as they share same outfall. Sheen is light in color and estimated at 50 ft x 50 ft.
				4/22/2008	Unknown oil sheen	Unknown	Outfall 22	Unknown sheen coming out of Outfall 22 from unknown source.
				4/16/2008	Oil sheen	Unknown	Outfall 22	Sheen in river observed coming from outfall due to unknown reasons.
				4/8/2008	Unknown oil sheen	Unknown	Outfall 22	Unknown sheen coming out of Outfall 22 from unknown source.
				3/26/2008	Unknown oil sheen	Unknown	Outfall 22	Unknown sheen from unknown source.
				3/21/2008	Unknown oil sheen	Unknown	Outfall 22	Unknown sheen from unknown source.
				3/13/2008	Unknown oil sheen	Unknown	Outfall 22	Unknown sheen from unknown source.
				3/8/2008	Unknown oil sheen	Unknown	Outfall 22	Unknown sheen from unknown source.
				2/29/2008	Unknown oil sheen	Unknown	Outfall 22	Ongoing observation (since 1/17/08) of petroleum sheen that has been discharging from outfall. Sporadic sheen.
				2/28/2008	Unknown	Unknown	Outfall 22	Release into outfall system from stormwater pipe.
				5/2/2007	Lube oil	55 gal	Storm drain	On May 2, 2007, a 55-gallon drum of lube oil was spilled into a storm drain that drains to the Willamette River at a warehouse located at the Chevron leasehold. Booms were placed around the sheen and a vacuum truck was called in to clean the sheen.
				4/18/2007	Diesel	Unknown	River	Fuel line broke causing discharge to river. Release originated on Kinder Morgan portion of the facility.
				2/9/2007	Unknown	Unknown	River	50' x 100' sheen reported near Kinder Morgan, Chevron Conoco. Release originated on Kinder Morgan portion of the facility.
				9/20/2006	Unknown	Unknown	River	Hose ruptured while loading a barge resulting in discharge to river. Release originated on Kinder Morgan portion of the facility.
				7/23/2006	Hydraulic Oil	Unknown	River	A ship loader fell onto the ship, hydraulic fluid was noticed dripping onto the dock, sheen was also noticed in the river. Release originated on Kinder Morgan portion of the facility.
				7/6/2006	Hydraulic Oil	Unknown	River	Hydraulic line broke on a ship loader which resulted in the release of material into the river. Release originated on Kinder Morgan portion of the facility.
				2/14/2005	Jet fuel, JP-8	2 gal	River	Release occurred when transferring jet fuel from barge to transfer station. Booms and pads applied, valve shut off immediately.
				12/30/2004	Unknown oil	Unknown	Outfall 22	Release of unknown material from an outfall due to unknown causes.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Willbridge Terminals (Kinder Morgan, Shell, Conoco Phillips) #1549				7/30/2003	Jet fuel, JP-8	Unknown	River	Small amount of aviation fuel released to river from hose used to depressure pipeline. Release occurred on downriver side of marine dock adjacent to hose riser manifold at 5524 NW Doane St.
				3/27/2003	Unknown oil	Unknown	Outfall 22	Unknown sheen of unknown oil observed.
				10/15/2002	Marine fuel oil	Unknown	River	Material released from barge at Conoco Phillips due to faulty connection to discharge header.
				9/29/2002	Unknown oil	Unknown	Outfall 22	Unknown sheen observed at 5528 NW Doane Ave.
				4/18/2002	Unprocessed/semi-processed oil	1 gal	River	Sheen observed between the SN YUKON and the containment boom at berth 314.
				11/21/2001	Other oil (possibly gas turbine oil GST 1000)	Unknown	River	Potential leak of hydraulic oil from propeller shaft of Chevron COLORADO 651. Release occurred at Chevron Willbridge Upper Berth.
				9/28/2001	Diesel fuel	1 gal	River	Transferring fuel from tank to barge (Tidewater) sheen on river under dock. Leak from barge, fracture on bulkhead of tank.
				3/26/2001	Diesel fuel	1 gal	River	Tug refueling area at Conoco Tank Farm released diesel to water.
				11/13/2001	Unprocessed/semi-processed oil	1 gal	River	Chevron COLORADO leak from blade seal on controllable pitched propeller.
				1/12/2001	Unprocessed/semi-processed oil	1 gal	River	Oil sheen released from dry dock #4 during the re-float of Navy ship TIPPACANOE
				10/30/2000	Motor, bearing, propeller and other lubrication oils	1 gal	River	Chevron COLORADO hit log with the hydraulic propeller.
				6/14/2000	Unknown oil	Unknown	Outfall 22	Unknown sheen observed.
				12/11/1999	No. 2-D Fuel oil	Unknown	Outfall 22	Spill occurred while fueling a tug at Tosco Dock.
				9/4/1993	Automotive gasoline	Unknown	Outfall 22	Unknown rainbow sheen observed 200 ft x 3 ft
				3/4/1992	Unknown oil	Unknown	Outfall 22	Sheen observed
				12/2/1991	Unknown oil	Unknown	Outfall 22	Unknown sheen observed
				11/1/1989	Oil	10 gal	River	
				6/12/1989	Asphalt	7,000 gallons	River	An asphalt spill of 7,000 gallons into the Willamette River at the Chevron Willbridge Site Dock occurred on June 12, 1989. Cleanup operations were immediately implemented. The final phase of cleanup included sampling the river bottom of the dock area and analysis for TPH. No areas were found to contain elevated TPH levels.
				9/9/1984	Heavy hydrocarbon	NA	River	Seepage from docking facility.
				9/4/1984	Heavy hydrocarbon	NA	River	Seepage from docking facility.
				8/1/1984	Black oil	NA	River	Seepage from docking facility.
				12/1/1982	Petroleum product	90 gal	Saltzman Creek	
				3/1/1982	Oily water	NA	Saltzman Creek	Leak from weephole in flume wall.
				12/1/1981	Diesel	NA	Saltzman Creek	Leak from drum on pick up.
				4/1/1981	Undocumented solvent	NA	Saltzman Creek	
				4/1/1980	Lube oil	2 gal	River	
				10/1/1979	Aviation gasoline	70 gal	River	
				3/7/1979	Bunker oil	2 - 5 gal	Overwater dock	100% recovered.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Willbridge Terminals (Kinder Morgan, Shell, Conoco Phillips) #1549				1/19/1979	Aviation fuel	3,297 gal	River	M/V Pecos struck the Shell Oil dock while berthing and ruptured a Jet A line releasing aviation fuel into the river.
				6/1/1978	Gasoline	NA	River	
				6/1/1976	Gasoline	NA	River	
				12/1/1975	Asphalt	100 gal	Saltzman Creek	Tank overflow.
				2/23/1973	Fuel	Unknown	River	An oil spill occurred at the Union Oil Dock on February 23, 1973 during a transfer to the vessel Dredge OREGON. An oil containment boom was deployed to contain the spill.
				1/13/1971	Gasoline	2,500 gal	River	On January 13, 1971, oil tanker M/V Houston hit a gasoline main at the Shell Oil dock and over 2,500 gallons of gasoline was released to the Willamette River.
				8/19/1956	Oil	Unknown	River	Portland Harbor Patrol observed oil in the River possibly coming from "old pipes" under the Shell Oil dock.
				8/18/1956	Oil	Unknown	River	Portland Harbor Patrol observed oil in the River possibly coming from "old pipes" under the Shell Oil dock.
				3/10/1956	Gasoline	1,000 gal	Dock	Occurred at Shell Oil dock while loading a barge.
				1/21/1956	Bunker oil	20 gal	Dock to river	Occurred at Shell Oil dock.
Freightliner	7-8	E	Truck parts and manufacturer.	11/25/2009	Diesel fuel	1,000 gal	Storm drain to river	BES Portland reported fire retardant foam went into the storm drain near the 5036 N. Lagoon outfall, which leads into the Willamette, due to a fire at Freightliner. Up to 1,000 gallons diesel unaccounted for.
				1/25/2007	Unknown	Unknown	Storm drain to river	During regular Port inspections at the Dredge Base, a sheen was observed concentrated around the northern partition of the mooring barge. The source of the sheen was determined to be originating from City outfall M-1, located northwest of the barge location, where the sheen was observed entering the river. The Port later discovered that a release had originated from the nearby Freightliner facility, which also discharges stormwater to outfall M-1. Available records indicate the Coast Guard was notified and Freightliner responded to the spill. Response activities included booming the area proximal to the barge.
				11/29/2006	Pure gear oil	450-500 gal	River	Discharge from City Outfall M-1. Rupture of oil line (synthetic 50 weight lube oil) at facility.
				11/29/2006	Oil water mixture	1,000 gal	River	Discharge from City Outfall M-1. Rupture of oil line (synthetic 50 weight lube oil) at facility.
				7/29/2004	Unknown oil	Unknown	River	Material release discovered from an unknown source in the catch basin at Freightliner, 6936 N Fathom St.
				4/9/2002	Diesel sheen	Unknown	Sheen at storm water outlet	Fuel line rupture on truck.
				7/25/1995	Untreated wastewater	3,000 gal	Storm drain to river	Released to river due to an open valve.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Shaver Transportation #2377	8.4	W	Current: General towing and lightering; Historical: Mobile telephone service and marine transportation.	3/3/2005	Diesel	10-30 gal	River	Spill contained and cleaned up.
				9/29/2001	Diesel oil	1 gal	River	Tug SANDY sank at Shaver dock.
				8/19/1998	Oil	2-5 gal	River	Released when tug picked up 20 ft section of bunker hose with its propeller that contained oil.
				7/21/1996	Diesel oil	Unknown	River	Released when floating shop facility partially sunk.
				11/14/1996	Unknown oil	Unknown	River	Sheen observed (50 ft x 1000 ft, yellow-green color)
Willbridge Terminals (WMCSR-NWR-94-06) #2355	7.7	W	Current: Distribution of refined petroleum products (gasoline, diesel fuel, lubricating oil), fuel storage.	5/16/1996	No.2 Fuel oil	Unknown	River	Fuel valve closed on diesel engine on crane (on a barge) causing filter to overflow.
				1989	Asphalt	6,300 gal	River	Multiple instances of sheen was observed on water (1998-2004), no spills >1 gallon.
				5/9/2010	No. 1-D fuel	Unknown	River	Spill occurred during fueling of Sea Link Marine at fuel dock.
McCall Oil #134	7.9	W	Asphalt manufacturing and chemical manufacturing, storage and distribution.	8/7/2006	Diesel	Unknown	River	Material release from a tank barge due to operator error.
				10/16/1998	Unprocessed/semi-processed oil	Unknown	River	USCG reported 250 ft x 1/4 mile long light sheen near McCall Oil Dock.
				10/13/1998	Oil	2 gal	River	Oil/water separator outflow was clogged and oil released to river.
				12/10/1996	Unknown	<1 gal	Parking lot - storm drain	Material washed onto parking lot.
				6/1/1994	Oil	1 quart	River	
				1991 and mid-1970s	Asphalt	Unknown	River	
				Mid-1970s	Oil and water	Unknown	River	
				2/3/2011	No. 2-D fuel oil	Unknown	River	Release of fuel from boat at marina. The tank "burped" and a small amount came out the vent.
US Coast Guard - Marine Safety Station #1338	8	E	Current: USCG marine safety and marine inspection offices; Historical: Roofing shingle manufacturer, lumber company.	12/11/2010	Gasoline	Unknown	River	While refueling Sheriff's office boat at Station Portland Dock, fuel tank "burped" causing a release of unknown amount of fuel. Sheen was observed near dock and flowing with river. Sheen was approximately 2 ft x 50 ft.
				6/5/2010	Gasoline	Unknown	River	Discharge of fuel from police vessel. After fueling, the vessel drove away from fuel pier with gas tank uncapped.
				5/8/2010	Motor oil	2 qts	River	Due to engine problem, oil leaked from engine and discharge to river.
				4/6/2010	Motor oil	1 cup	River	An engine malfunction caused a release to the water.
				10/28/2009	Motor oil	Unknown	River	Spill of materials to river due to operator error.
				7/11/2009	No 2-D fuel oil	1 pint	River	USCG was refueling county sheriff boat at fuel dock. When recapping the tank and departing, the tank burped and released 1 pint of diesel fuel into river.
				1/28/2009	Motor oil (Castrol GRX 10W30)	Unknown	River	Release of oil occurred when individual slipped while filling up outboard engine.
				6/5/2008	Gasoline	2 gal	River	Overflow during vessel fueling.
				6/9/2007	Gasoline	Unknown	River	Overflow during vessel fueling.
				9/11/2007	Motor oil	1 quart	River	Discharge during engine vessel maintenance.
				12/7/2004	Petroleum	Sheen	River	

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Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
US Coast Guard - Marine Safety Station #1338				8/18/2002	Diesel - bilge from tug	10 gal	River	Release from bilge of tug ST.NICHOLAS. 400-by 100-ft sheen.
				9/9/1999	ZEP paint and varnish remover	1 gal	River	Hose rupture.
				11/28/1998	Diesel	30 gal	River	Unknown cause, suspect bilge pumping. No responsible party identified.
				10/8/1996	Fuel	Unknown	River	
				1991	Hydraulic oil	1 gal	River	Released from POLAR SEA.
Fred Devine Diving and Salvage #2365	8.2	E	Current: Moorage; Historical: Moorage and waterfront structures (1940s), cleaner and solvent storage.	5/10/2006	Hydraulic oil	1 pint	River	Pleasure cruiser broken line spilled material into river.
				2000	Paint	5 gal	River	1 pint of hydraulic oil spilled into Willamette - date unknown. Crews cleaned up spill.
				11/27/2000	Oil	3 gal	River	Release of oil / Mobile L EAL 224H from a hose on a hydraulic unit bursting; approx. 30 ft x 30 ft sheen observed; report indicates 3 gallons of oil released to Willamette River; spill dissipated in the water.
				3/10/1999	Unknown oil	Unknown	River	Oil sheen near Fred Divine outfall (outfall one mile) 40 ft x 1,000 ft - unrecoverable.
				3/8/1995	Diesel	Unknown	River	Bag of used sorbent pads had a split in it and caused a release of diesel. Estimated 40 ft x 70 ft sheen on lagoon. Pads and boom deployed around spill.
				7/29/2010	Unknown material	Unknown	River	Spill of unknown material from vessel EDISONS WEST.
Cascade General #271	8.4	E	Current: Cascade General - Ship repair yard and other industrial operations, POP - parking lot/undeveloped property; Historical: Military shipyard and military ship dismantling (1942-1949), POP - leased out to ship repair/industrial operators (1950-1996), Cascade General - ship repair/industrial operations (1996-present).	3/4/2010	Unknown oil	Unknown	River	Sheen observed while running engine test on GLOBAL SENTINAL at dock.
				2/22/2010	Diesel fuel No. 2-D	Unknown	River	Diesel spilled on barge, small amount discharged to river.
				12/30/2009	Hydraulic oil	0.5 gal	River	
				10/21/2009	Motor oil	1 gal	River	
				10/6/2009	Unknown oil sheen	Unknown	River	Unknown sheen observed in Portland Shipyard.
				9/9/2009	AFFF foam	3 gal	River	Discharge from deck nozzle on USNS CARL BRASHEAR. Equipment failure.
				7/13/2009	"A triple F"	5 gal	River	Release of "A triple F" from sprinkler to drain onboard vessel USNS CARL BRASHEAR due to operator error while installing "A triple F" switches. Release occurred at Berth 313.
				3/9/2009	Sandblasting dust	Unknown	Storm drain	Sandblasting debris entering storm drain near 5020 N Channel Ave.
				2/23/2009	Hydraulic oil	1 gal	River	Hydraulic hose failed releasing hydraulic oil onto deck of vessel GLOBAL SENTINAL and less than 1 gallon into river. The vessel was in dry dock and a hydraulic hose broke on the crane. The vessel was pre-boomed, the oil sprayed over the knife edge of deck. Approximately 1 cup of oil sprayed over side. PRP listed as Transoceanic Table Ship Company Inc.
				2/19/2009	Unknown oil sheen	Unknown	River	Unknown sheen observed.
				11/18/2008	Unknown oil sheen	Unknown	River	Unknown sheen observed.

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Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Cascade General #271				11/10/2008	Unknown oil	0.5 gal	River	Released from deck of barge due to runoff from rain at Berth 310. PRP listed as DIX corporation, Max J. Kurney Construction.
				9/18/2008	Unknown oil	1 cup	River	Released from rudder of vessel M/V HIM BRENTON REEF due to leak. Released at Dry Dock #3.
				9/16/2008	Hydraulic oil	1 cup	River	ACOE Dredge Essayons lost less than 1 cup of hydraulic oil from the propeller system, sheen was contained inside boom. Sheen non-recoverable.
				8/25/2008	Lubricating oil	Unknown	River	While testing propeller shaft in shipyard for overhaul and while returning the shaft, sheen was observed in water next to ship. Chevron Texaco listed as PRP.
				7/18/2008	Unknown sheen	Unknown	River	Unknown sheen observed.
				6/17/2008	Unknown oil	Unknown	River	Discharge of oil from SS CAP JACOB due to unknown causes.
				6/3/2008	Unknown oil	Unknown	River	Discharge of residual oil from deck of tanker vessel due to heavy rainfall. Chevron Shipping company listed as PRP.
				5/12/2008	Hydraulic oil	2 gal	River	Release of oil into Swan Island Lagoon due to drain plug in pipe accidentally kicked by workers at berth 302 of Cascade General. Area was pre-boomed, pads applied and bubbler used to confine sheen.
				6/3/2008	Residual oil	~2 tbsp.	River	Chevron reported ~2 tablespoons of residual oil washed off deck of tanker at 5555 N Channel Ave.
				9/27/1997	Diesel fuel	50 gal	Storm drain	Unknown source, 50 gallons diesel 20 yds in storm drain.
				8/23/2007	Sandblasting dust	50 lbs	River	Sandblasting vessel and large quantities of grit and sandblasted material went into the Swan Island Lagoon.
				6/28/2007	Lubricating oil	Unknown	River	Leak from vessel.
				4/13/2007	Lubricating oil	100 gal	River	Release 100 gallons lube oil from T/V Chevron Mississippi. CRC for cleanup actions. Booms deployed by RP.
				4/10/2007	Oily mixture	Unknown	River	While cleaning out bunker tank on M/V POLAR ENDEAVOR, an oily mixture going to shore through hose from a portable tank to a slop tank had a leak and released material to river.
				3/5/2007	Unknown oil	Unknown	River	Materials released from unknown source created sheen on water between vessels and dock. Material is inside boom surrounding vessel, but is not known where material originates.
				12/4/2006	Other oil	Unknown	River	Release into river from leaky pipe.
				9/23/2006	Oil, misc: lubricating	Unknown	River	Check valve failure.
				9/23/2006	Lube oil	~5 gal	River	Check valve failed at Dry Dock One, spilled 5 Gal lube oil to Willamette River.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Cascade General #271				9/13/2006	Diesel	1 gal	River	Less than one gallon of oil spilled to the Willamette River by Cascade General. Work boat burped while unmanned. Equalizer line may be clogged causing all the fuel to build up in one tank rather than remaining equalized between both tanks. Mechanics at work to resolve. Sheen too light to recover.
				4/18/2006	Sandblasting dust	Unknown	River	
				5/13/2004	Hydraulic oil	<5 gal	River	Small amount of hydraulic oil spilled on dock, when dock is submerged, a sheen is seen in the water.
				11/25/2003	Lube oil	15 gal	River	22-50 gallons released during transfer of the USNS JOHN OLMSTEAD docked. 15 gallons released to river.
				6/29/2003	Hydraulic oil	Unknown	River	Release of hydraulic oil to water from a crane on a vessel at Berth 302/303. Fluid reportedly spilled while testing a hose that sprung a leak. Material contained and cleanup was conducted.
				5/29/2003	Lube oil	55 gal	River	Released from vessel, UNIVERSE EXPLORER, due to broken lube line.
				3/28/2003	Oil	1 gal	River	A piece of metal fell into the lagoon. Approximately 1 gallon of oil released to surface water.
				4/11/2002	Oil	2 L	River	Release of 2 liters of oil into the Willamette.
				8/10/2001	Unprocessed/semi-processed oil	1 gal	River	Slight sheen on Willamette River. No additional information available.
				12/16/2000	Oil	0.5 gal	River	Residual oil spilled from equipment being loaded onto a barge; most contained on barge - 0.5 gal released to Willamette River.
				12/6/2000	Oil	0.5 gal	River	Residual oil spilled from equipment while loading onto barge.
				11/20/2000	None released	None	None	Pacific Scout fishing trawler caught on fire in dry dock.
				10/17/2000	Waste oil	2 gal	River	A gasket on 6-inch oil slop line failed causing waste oil to spill from the line into Swan Island Lagoon; approx. 15 ft x 3 ft sheen observed; report indicates 2 gallons of bunker-like waste oil released to Willamette River; booms applied and contractor called for cleanup.
				10/4/2000	Lubricating oil	5 gal	River	Release of lubricating oil from 6-inch slop line during testing operations due to a cracked valve; approx. 40 ft x 3 ft rainbow-colored sheen observed; report indicates 5 gallons of oil released to Willamette River; containment boom deployed and absorbent pads used.
				6/9/2000	Hydraulic oil	1 barrel	River	Materials released while testing emergency fire pump. No known reason for release.
				5/22/2000	Diesel	3 gal	River	3 gal fuel can of diesel fell in river.
				4/5/2000	Unknown	0.5 gal	River	Unknown cause.
				3/21/2000	Diesel	~5 gal	River	5 gal diesel into river, after check ball valve failed.
				2/23/2000	Generator fuel	~1 gal	River	10 gal spilled during generator testing, ~1 gal reached river.
				10/23/1999	Lubricating oil	30 gal	River	Lube oil flushing pump/ruptured hose. Oil spilled into boomed containment area at #304.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Cascade General #271				1/29/1999	Hydraulic oil	5 gal	River	Approximately 5 gallons of hydraulic oil was blown into the water while draining the stem lube of a vessel on Dry Dock 3. Cascade General received a notice of violation for the release from the Coast Guard.
				01/00/1999	Hydraulic oil	5 gal	River	
				10/20/1998	Generator fuel	5 gal	River	
				10/00/1998	Diesel fuel	25 gal	River	Approximately 25 gallons of diesel fuel was released from a generator. Cascade General received a notice of violation from the U.S. Coast Guard.
				10/1/1998	Diesel fuel	25 gal	River	Approximately 25 gallons of diesel fuel was released from a generator. Cascade General received a notice of violation from the U.S. Coast Guard.
				12/23/1997	Diesel	25-50 gal	River	Line broke during pressure testing, 50-100 gallons went into river.
				11/13/1997	Crude oil	100 gal	River	
				9/27/1997	Diesel	22 gal	River	
				9/27/1997	Diesel	50 gal	River	Fuel tank on truck struck piece of I-beam and damaged tank. Approximately 50 gallons diesel released 20 yards in storm drain.
				8/28/1997	Unknown oil	25-40 gal	River	~25 gal of black waste oil released from an outfall into Swan Island Lagoon.
				3/21/1997	Wastewater	Unknown	River	During a facility inspection, DEQ observed the discharge of wastewater into the river via an unauthorized discharge point. DEQ subsequently issued NON #NWR-HW-97-030/NWR-WQ-97-043 on 5/1/1997.
				3/18/1997	Wastewater	Unknown	River	During a facility inspection, DEQ observed the discharge of wastewater into the river via an unauthorized discharge point. DEQ subsequently issued NON #NWR-HW-97-030/NWR-WQ-97-043 on 5/1/1997.
				9/23/1996	Unknown	Unknown	River	While performing over-water tank washing on the vessel SAN FRANCISCO, Cascade General failed to cap the end of the discharge line resulting in the release of the residual material.
				4/9/1996	Unknown oil	~25 gal	River	Oil released into the river when a stern line broke on the USS HIGGINS.
				10/9/1995	Ballast water	40 gal	River	Oil in lines used to release ballast water spilled during dry docking. Release of approximately 40 gallons of petroleum from vessel OMI COLUMBIA. The Coast Guard issued a notice of violation to Cascade General for release (USCG #PEN-210-95, Oregon Incident Report #95-2006).
				2/7/1995	Oil	Unknown	River	An oil spill was observed at Berth 305 coming from the storm drain at the berth. The Coast Guard was notified.
				8/23/1994	Bunker fuel	Unknown	River	A hose came out of the top of the tank and released bunker fuel onto the Pier. Bunker fuel was cleaned up with dry agent and absorbent material.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Cascade General #271				3/2/1994	Slops	Unknown	River	Pacific Dynamics was observed dumping slops down a manhole or storm drain in the yard.
				2/4/1994	Gasoline	0.5 gal	River	A forklift tipped over and the gas tank leaked. Sorbent pads were used to cleanup. Report indicates 0.5 gallon released to river.
				9/18/1993	Unknown oil	Unknown	River	An oily substance was observed in the water at Berths 301 through 304. Cascade General was notified and they reported that an oil boom had opened and were catching as much of the material as possible.
				8/19/1993	Unknown	Unknown	River	Cascade General employees were observed using high pressure water hoses to blast an unknown substance off a barge into the water.
				7/20/1993	Hydraulic oil	~50 gal	River	
				7/4/1992	Hydraulic oil	Unknown	River	A small hydraulic oil spill occurred on the main deck of Dry Dock 4 after a line ruptured on the hydraulic oil pumper.
				6/8/1992	Water and sludge oil	Unknown	River	WSI slop tank overflowed with water and sludge oil on Pier D Berth 313 (east end of Dry Dock 4).
				2/13/1992	Fuel	Unknown	River	Fuel was observed coming from a storm drain at Berth 311, approximately 30 ft x 60 ft. Coast Guard stated it was a thin film and not to worry about it.
				1/8/1992	2-D Fuel oil	3 barrels	River	Oil released from F/V PACIFIC EXPLORER into river during fuel bunkering operations.
				9/16/1991	Waste oil / lubricants	35 gal	River	Sheen observed at Rivermile 8.5; report indicates 35 gallons of waste oil/lubricants released to Willamette River; Northwest Marine conducted cleanup and recovered 30 gallons of product.
				9/16/1991	Waste oil/lubricants	~35 gal	River	
				6/25/1991	Oil	Unknown	River	Oil sheen observed.
				6/9/1991	Sandblasting dust	Unknown	River	Sandblast sand released to river from side of a Greek-flag vessel. Cascade General was identified as the prime contractor.
				4/27/1991	Hydraulic fluid	15-20 gal	River	Estimated 15 to 20 gallons of hydraulic fluid released from a punctured drum on the pier. Chempro contacted to clean up material on pier and in the river. Blankets placed to absorb the material on the pier.
				4/17/1991	Lube oil	150-200 gal	River	Discharged oil into storm drain that discharged into River from Exxon's vessel EXXON BENICIA.
				7/19/1989	Hydraulic oil	1 gal	River	Estimated 1 quart of hydraulic oil was released to Willamette River due to equipment failure; a hydraulic hose on a man lift arm broke during a painting operation on the SS ATIGUN PASS. Cascade deployed booms and used skimmers to clean up the material.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
Cascade General #271				11/30/1987	Petroleum residue	Unknown	River	Port employees were observed cleaning equipment with commercial oil emulsifier known as Gamlin. The petroleum residue was draining into the Willamette River.
				6/11/1987	Diesel	~25 gal	River	
				4/11/1982	Ballast water	900 bbls	River	Release of oil to Willamette River discharged from ship repair facility.
				5/14/1980	Oil	Unknown	River	
				8/18/1974	Paint & debris	25 gal	River	The river eroded filled area and control house for drydock fell into the river. Estimated release of 25 gallons of paint, a small quantity of oil and a substantial amount of debris.
				3/20/1973	Waste oil	2-4 gal	River	Release of waste oil from tanker wash water tank area (possibly aged Bunker C). Spill migrated to an 8 ft tunnel below the storage tank area. The tunnel connected to a 10-inch outfall in the vicinity of Berth 310; approx. 200 sq ft slick observed in SW corner of small boat base; estimated 2-4 gal released to Willamette River from outfall.
Gunderson LLC #1155	8.8	W	Current: Manufacturing rail cars and marine barges; Historical: Rail car and marine vessel manufacturing, ship dismantling and auto salvage.	5/20/2010	Hydraulic oil	Unknown	Storm drain	During storm water sampling at Outfall 377, a sheen was observed on the water at catch basin.
				5/17/2010	Hydraulic oil (vegetable)	Unknown	River	Vegetable oil discharge from hydraulic system during hydrostatic testing. The material discharge from a coupling that was loose.
				2/26/2001	gtea-415 & toluene	1.5 gal	River	
				8/23/2000	Water-based paint	Unknown	Storm drain	Employees in paint department rinsed pain brushes into storm drain.
				3/18/1994	Unknown oil	Unknown	River	Holding tank on barge fell off barge resulting in release.
Equilon Property (Pipeline Containment) #2117	8.8	W	Current: Storage/distribution of gasoline, diesel and ethanol; Historical: Beginning in 1928 -Storage/distribution of petroleum, bunker fuel, jet fuel, and lubrication oil.	1994, 1992, 1989, 1988	Diesel	~250 gal	River	Action was taken.
Texaco Portland Terminal #169	8.8	W	Current: Storage/distribution of gasoline, diesel and ethanol; Historical: Beginning in 1928 -Storage/distribution of petroleum, bunker fuel, jet fuel, and lubrication oil.	3/23/1998	Diesel oil	20-25 gallons	Outfall to river	100 ft sheen in cove by dock originating from storm water outfalls.
				2/8/1996	Diesel oil	Unknown	River	Spill containment tank/flood waters entered and overflowed the tank.
				9/19/1992	No.2-D Fuel oil	Unknown	River	Tidewater tank barge No. 64 overfilled, sheen observed.
Goldendale Aluminum #2440	10	E	Current: Storage of lubricating and hydraulic oils; Historical: Alumina and electrode binder pitch unloading facility, grain shipment facility.	12/28/1991	Bunker C fuel	8,000-11,000 gal	River	Estimated 8,000-11,000 gallons of intermediate fuel oil was spilled by M/V Tai Chung (owned by Taiwan Navigation Company), a bulk aluminum oxide carrier, during bunkering operations from a fuel barge tied up next to it.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
POP - Terminal 2 #2769	10	W	Current: Marine terminal; Historical: Marine terminal, shipyard-ship construction during WWII (unknown to 1949), exporter of agricultural and manufactured wood products.	9/9/2010	Hydraulic oil	1 gal	River	Discharge of hydraulic oil from fire hubs. PRP listed as USACE.
				10/26/2000	Diesel or motor oil	Unknown	River	A spill was reported from two different sources, including diesel that had been tracked around the property from a leaking vehicle and motor oil near a storm drain (source unknown). SSA put pads and booms around the storm drains, but a sheen was present on the river at Berth 203. Foss Environmental was contacted for cleanup and the incident was reported to the National Response Center and the Oregon Emergency Response System.
				10/25/2000	Hydraulic oil	1 gal	River	
				10/9/1998	Hydraulic Oil	2 gal	River	1-inch pipe on deck of vessel PACIFIC KING cracked during hatch cover operation releasing ~1 liter to the water.
				10/17/1997	Unknown	Unknown	Potential release to the river	An employee exited an SSA truck while the engine was still running and the vehicle rolled over the bullrail at Berth 206 and sank in the Willamette River. No sheen or debris in the river was observed. The vehicle was pulled from the river approximately two hours after it sank.
				2/5/1996	Motor oil	1 gal	River	Approximately 1 gallon of motor oil was released to the dock on the northern portion of the property, due to a damaged barge lift operated by one of SSA’s customers. Due to rain, the sheen expanded to a larger area and discharged to the Willamette River through the storm water conveyance system. Absorbent booms were placed around the catch basins once the spill was identified and the release was reported to the Coast Guard. Absorbent booms were also placed in the river in the vicinity of the storm water outfalls to prevent the remainder of the material from dispersing. The oil was subsequently cleaned up from the dock and properly disposed of off-site.
				1/15/1995	Paint spilled from vessel into river	Unknown	River	M/V PAC PRINCE spilled pallet load of paint (silver paint, green paint and thinner)into river. NRC Incident #276445.
				1/15/1995	Pallet load of paint spilled from ships crane	Unknown	River	M/V PAC PRINCE spilled pallet load of paint (grey, green, and orange colored paint, and thinner). Incident occurred at Terminal 2, Berth 4. NRC Incident #276446.
				12/5/1992	Hydraulic fluid	Unknown	River	A piece of SSA equipment was found to be leaking hydraulic fluid. Despite application of sorbent material by SSA, hydraulic fluid was discharged to the storm water system and subsequently released to the Willamette River in the vicinity of Berth 204 where it created a sheen several hundred square feet in size.

Table 4.3-5. Overwater Releases from ECSI Sites within the Study Area.

Site Name and ECSI#	River Mile	River Bank	Major Industrial Operations	Documented In-River				Comments
				Date	Materials Released	Volume Spilled	Spill Surface	
POP - Terminal 2 #2769				6/17/1978	Oil and bilge water	Unknown	River	
				2/26/2010	Hydraulic oil	1 gal	River	Spill from Tidewater Barge Line tug boat due to equipment failure. A hydraulic seal failed on the vessel, resulting in a spill of 3 gallons on deck and 1 gallon into river.
				12/18/2008	Gear box oil	Unknown	River	Release of gear box oil from small winch on dock due to unknown cause. Small sheen resulted.
				8/17/2008	Gear oil	8-10 gal	River	Gear oil released due to operator error during repair of dockside machinery.
				6/12/2008	Gear oil, 8090 weight	1 qt	River	5 gallon bucket on dock kicked over and released ~ 1 qt to river.
				10/29/2001	Unprocessed/semi-processed oil	10 gal	River	Sheen observed near M/V ROVER. Sheen old, gray and weathered, not from vessel.
				2/16/2001	Hydraulic oil	Unknown	River	Unknown sheen observed between V.COMOS VERDE and river bank. Sheen size 50 ft x 200 ft at Cargill Incorporated.
				2/12/1998	Hydraulic oil	Unknown	River	Malcom Drilling Co. machine leaked hydraulic oil onto soil and into river.
				9/12/1995	Other oil	Unknown	River	M/V ESPERANZA release of bilge water.
				8/18/1995	Unknown oil	unknown	River	Sheen observed near M/V OCEAN CROWN, 40 ft x 300 ft.
Glacier Northwest	11-12	E	Cement manufacturer.	3/30/2008	Hydraulic oil	4 gal	River	Hydraulic line on the TASMANSEA broke releasing approx. 15 liters of hydraulic oil to the deck of the boat.
				10/23/2006	Unknown organic chemical	Unknown	River	Drum containing organic chemicals spilled onto deck of M/V OCEAN EXPLORER and into river.
				8/26/2004	Oil	1 gal	River	Hydraulic line failure on dock.
				2/10/2000	Hydraulic oil	Unknown	River	Hydraulic line failure caused a release.

Notes:
Spills information obtained from National Response Center Online Database (www.nrc.uscg.mil) and Supplemental Preliminary Assessment, Swan Island Upland Facility (Ash Creek and Newfields 2006). □

- AST - aboveground storage tank
- CRSG - Columbia River Sand and Gravel
- CSM - conceptual site model
- DEQ - Oregon Department of Environmental Quality
- ECSI - Environmental Cleanup Site Information
- EOSM - Evraz Oregon Steel Mills
- ERIS - Emergency Response Information System
- KI - Koppers International
- NA - not available
- NRC - National Response Center
- POP - Port of Portland
- SSA - Stevedoring Services of America
- TPH - total petroleum hydrocarbon
- USACE - U.S. Army Corps of Engineers
- USCG - U.S. Coast Guard

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Unknown	Multnomah Channel	Pleasure craft	12/26/2007, 1/27/2010	A 12/26/2007 report to the NRC stated that a release of gas from a sinking vessel entered the river. An incident report to the NRC on 1/27/2010 noted spray paint was being applied to a vessel in Freds Marina, with residue noted on the surface of the water.	Direct discharge to river	NRC Incident Reports ^a
Alaska Sea Cloud	2-3	Barge	11/13/2001, 4/10/2006 and 4/12/2006; 9/21/2006	On November 13, 2001, a report to the NRC stated that an unknown amount of residual oil was released from a barge and a sheen was noted on the river. A similar report occurred on April 10, 2006 discussing a release from a barge with a sheen on the river. No volume estimate of substance was noted in the NRC report. Another release occurred from the same barge on April 12, 2006 when approximately three ounces of oil was released from the deck of a barge into the river. On September 21, 2006, the SEA CLOUD was moored at an undisclosed location in Portland Harbor at which time it was reported to the NRC that an overboard discharge line released approximately two tablespoons of oily bilge water into the river due to a defective check valve.	Direct discharge to the river	NRC Incident Reports
Blue Water Shipping Company	2-3	Transportation	6/1/2001	On June 1, 2001 M/V MED INTEGRITY discharged an unknown amount of oil to the Willamette River while located at JR Simplot.	Direct discharge to the river	NRC Incident Report #568009, NRC Incident database
Steinfelds Products	2-3	Food processing plant, including a pickling plant	12/4/1997	A report to the NRC stated that approximately 400 gallons of diesel oil was released from a boiler backup storage tank overflow. Approximately 100 gallons of oil reached a nearby storm drain and was discharged into the Willamette River.	Discharge of material to river via storm drain	NRC Incident database
Sunshine Maritime, Ltd	2-3	Transportation	1/12/2006	A discharge of approximately 1 quart of hydraulic oil from vessel M/V SEA LADY occurred due to unknown causes.	Direct discharge to river	NRC Incident Report #784964
James River/Western Transportation	2-3, 4-5	Marine transportation including oil bunkering	8/10/1994, 10/24/1994, 10/3/1995	An Aug. 1994 report to the NRC stated that approximately of 10 gallons of diesel oil was released from M/V WESTERN STAR into the Willamette River during fueling. Oct. 1994 and Nov. 1994 reports to the NRC stated that approximately 1 pint of lubricating oil and 2 gallons of hydraulic oil were released into the Willamette River, respectively. In 1995, a lube oil spill to river occurred, but the location was not identified. No additional information available.	Direct discharge to river	NRC Incident database, Notice of Federal Interest for an Oil Pollution Incident
Fritz Maritime Agencies	2-3, 4-5	Marine transportation company	3/18/1994, 1/22/1998	In 1994, an unknown amount of petroleum product at Terminal 4 directly to the Willamette River. In January 1998, approximately one pint of hydraulic oil was reportedly released into the river.	Direct discharge to river	NRC Incident Reports
West Coast Marine Cleaning	2-3, 7-8	Cleanup contractor	12/23/1999, 5/2000 and 11/2000	In December 1999 a 3-gallon spill of waste oil from a vacuum hose occurred during tank cleaning of a barge when a hose connection came loose. In May 2000, a spill from diesel can of no more than 2 gallons occurred. In November 2000, a discharge of approximately 1/2 gallon of waste oil occurred due to a transfer hose rupture.	Direct discharge to river	USCG Pollution Reports; NRC Incident Report #547979
General Metals of Tacoma	3	Unknown	9/8/2009	Release due to 22 ft steel hull work boat sinking. Cause and amount of discharge is unknown.	In river	NRC 917199
M/V BIG BLUE	3-4	Cargo vessel	3/29/2001	In March 2001 at the International Terminals Slip, the ship discharged approximately 15 gallons of hydraulic and bunker oil during deballasting.	Direct discharge to river	NRC Incident Reports #561131 & 56143
M/V C. MEHMET	3-4	Merchant vessel	3/5/2001	A discharge of less than 1 gallon of IFO 380 oil occurred from this vessel due to a holed flange.	Direct discharge to river	USCG Pollution Report
M/V SP5 ERIC GIBSON	3-4	Product transfer	11/18/2003	A report to the NRC stated that approximately 1 gallon of hydraulic oil was released into the Willamette River from a container/roll-on or roll-off vessel due to a broken hydraulic fitting on a cargo crane.	Direct discharge to river	NRC Incident Reports
Mark Marine Service, Inc.	3-4	Marine towing company	1/8/1999 and 9/2000	A January 1999 report to the NRC stated that an approximately 1 bucket of lube oil was released from a tugboat into the Willamette River. In 2000, OSFM incident report stated that two tugs sank in Multnomah Channel near Alder Creek Lumber Company. An oil slick and debris were observed in the vicinity of Fred's Marina and Lucky Landing.	Direct discharge to river	NRC Incident Reports; Oregon State Fire Marshal database
Pan Ocean Shipping Co., Ltd.	3-4	Transportation	11/14/2006	M/V OCEAN JADE discharged 45 liters of hydraulic oil to the deck of the vessel, with at least 1 liter reaching the river. Discharge the result of a broken pipe.	Direct discharge to river	NRC Incident Reports
Tidewater Barge Lines	3.7	Transportation	4/22/2008	Unknown amount of unknown material released from barge due to runoff during rain.	Direct discharge to river	NRC 868798
Tidewater Barge Lines	4.2	Marine transportation company	8/17/1999	5 gallons of hydraulic oil (vegetable) were released into the river by Tidewater Barge Lines tug MAVERICK due to a leaking seal on a hydraulic ram.	Direct discharge to river	NRC 495417/ OERS 99-1918
HELM STAR	4.3	Marine vessel	11/4/1991	An oil spill from the vessel HELM STAR was observed at Berth 406. Riedel Environmental was contacted to clean up the spill.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
M/V ARGO MASTER	4.3	Marine vessel	5/27/1991	According to a Coast Guard report, a release of grain occurred from the M/V ARGO MASTER at Pier 1.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
M/V ATLANTIC BULKER	4.3	Marine vessel	12/28/2002	Unknown sheen observed adjacent to Port of Portland Terminal #4.	In river	NRC 632864
M/V BURKSHIRE	4.3	Marine vessel	12/5/1971	According to a Coast Guard report, a release of 187 gallons of oil occurred from the M/V BURKSHIRE at Pier 1.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
M/V JAY RATNA	4.3	Marine vessel	10/24/1971	According to a Coast Guard report, a release of 15 gallons of oil occurred from the M/V JAY RATNA at Pier 1.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
M/V OCEAN BEAUTY	4.3	Marine vessel	5/4/1994	The vessel M/V OCEAN BEAUTY was discharging ballast at Berth 401 and a sheen was discovered around the vessel; quantity/material not reported.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
M/V ORIENTAL ANGEL	4.3	Marine vessel	7/27/1993	An approximately 5 ft X 5 ft sheen was caused by the release of 0.1 gallon of lubricating oil from packing gland on rudder post of vessel M/V ORIENTAL ANGEL at Berth 401.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
NAPIER STAR	4.3	Marine vessel	3/22/1994	An approximately 480 ft X 300 ft silvery sheen of unknown oil was observed within Slip 1 at Berth 408 around the vessel NAPIER STAR; sheen reportedly contained within the slip; quantity of material not reported.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Not yet identified	4.3	Unknown	9/20/1973	A minor spill occurred from a ship docked the night before at the grain berth. The U.S. Coast Guard was notified and attempted to clean up the spill.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Not yet identified	4.3	Unknown	4/12/1991	An oily film and what appeared to be sludge was observed between Berth 403 and 408. The Coast Guard arrived and determined that substance was unknown and that it was not regular oil. It was determined that it was edible oil and grain dust.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Not yet identified	4.3	Unknown	4/14/1996	A boat sinking at Pier 2 caused a sheen on the water.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
OCEAN LARK	4.3	Marine vessel	8/17/1988	An oil slick from the grain ship OCEAN LARK (a grain ship) was reported. The Coast Guard was subsequently notified.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Pacific Molasses	4.3	Bulk liquid distribution	7/2/1982	On July 2, 1982, an oil slick was reported at Pier 2, Berth 408 2. The U.S. Coast Guard was notified and observed the spill. The Coast Guard reported that although not confirmed, the source may have been Barge #6 belonging to Pacific Molasses. The Coast Guard in turn followed up with Pacific Molasses.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Pacific Molasses	4.3	Bulk liquid distribution	4/25/1989	On April 25, 1989, 10 gallons of tallow was released from a ship line into Slip 1. The Coast Guard subsequently issued a Notice of Federal Interest in a Pollution Incident to Pacific Molasses for the release.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Portland Stevedoring Company	4.3	Stevedoring	11/9/1971	On November 9, 1971, Portland Stevedoring released bauxite ore into the Willamette River while unloading the MARABU PORR at Pier 2.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
S/S SHELLY	4.3	Marine vessel	5/11/1971	According to a Coast Guard report, an oil slick associated with the S/S SHELLY was observed at Pier 1.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
SANKO POPPY	4.3	Marine vessel	4/11/1989	The vessel SANKO POPPY was bunkering and an overflow occurred, spilling oil into the slip at Pier 1. A containment boom was placed in the slip.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Unknown Vessel	4.3	Marine vessel	4/20/1981	A release of diesel fuel occurred at Berth 403 from a Chinese vessel. The slick was estimated at 550 ft. (quantity not reported).	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
YONEUN	4.3	Marine vessel	4/4/1982	An oil spill was reported at Berth 401. The crewmen from YONEUN were reported to be in small boat trying to get the oil out with paper towels. The U.S. Coast Guard was notified. It was reported that the vessel had dumped its bilge water into the river.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
ANGEL HONESTY	4.6	Marine vessel	8/27/1993	An oil spill at Berth 410 at the stern of the vessel ANGEL HONESTY was observed. The Coast Guard was notified. The oil reportedly dissipated quickly.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Brix Maritime Co.	4.6	Transportation company	3/7/1992	A leak at Berth 411 occurred from a Brix Maritime barge fueling the vessel GORGOVA. The U.S. Coast Guard and a Brix investigator came to the site to evaluate the release.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
CELTIC PRINCESS	4.6	Marine vessel	1/30/1985	An oil slick at the bow of the CELTIC PRINCESS at Berth 410 was observed. The vessel crew said they were not responsible for the oil slick and its origin remains underdetermined.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Hall-Buck Marine Terminals / ANSAC PROSPERITY	4.6	Marine vessel	7/27/1992	On July 27, 1992, approximately 0.12 gallons of diesel released to river from overfilling during fueling operations on the carrier ANSAC PROSPERITY at Hall-Buck at Berth 411. Sorbents were used to collect the product.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
HANDY PRINCE	4.6	Marine vessel	6/14/1991	An oil slick was reported at Berth 411 which appeared to be coming from the vessel HANDY PRINCE. A small hole was noted on the vessel where there was liquid coming out and going into the river. The Coast Guard was notified and they documented the spill.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
KEN SPANKER	4.6	Marine vessel	4/7/1992	During transfer at Berth 411, approximately 300 gallons of black oil was released; the spill was reportedly contained on the vessel KEN SPANKER.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
M/V ANSAC ASIA	4.6	Marine vessel	3/27/1996	A release of oil occurred during fuel transfer to the M/V ANSAC ASIA when a tank was overfilled at Berth 411; approximately 1 gallon of 2-D fuel oil released to Willamette River; Riedel used sorbents to recover the material.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
M/V DONA AMALIA	4.6	Marine vessel	5/7/1971	A release of a small quantity of bauxite ore occurred to the Willamette River during unloading operations on the vessel M/V DONA AMALIA at Pier 4.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
M/V MARITIME FAITH	4.6	Marine vessel	5/28/1997	An approximately 25' X 25' sheen was discovered around and emanating from vessel M/V MARITIME FAITH at Berth 411; cause unknown; quantity not reported.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
M/V MAY STAR	4.6	Marine vessel	2/27/1993	Diesel was spilled while transferring material to the M/V MAY STAR at Berth 411; quantity not reported, spill reportedly contained on vessel.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
M/V SEASWAN	4.6	Marine vessel	5/20/1997	Approximately 1 teaspoon of 2-D fuel oil released during fuel transfer operations caused by a valve left open; vessel reported as M/V SEASWAN at Berth 411; absorbents used for cleanup of the spill.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Not yet identified	4.6	Unknown	5/26/1989	A sheen was noted on Slip 3.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Not yet identified	4.6	Unknown	3/10/1992	A light rainbow sheen was observed on water at the head of Berth 412 behind Jones gearlocker. OTC was aware of situation and had notified the environmental authorities	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Not yet identified	4.6	Unknown	1/11/2005	Approximately 0.5 cup of oil released from an outboard motor on a "little skiff" associated with a crane barge in Slip 3; cause reported as equipment failure; cleanup completed and included applying booms and absorbents and the skiff was removed from the water.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
PACIFIC QUEEN	4.6	Marine vessel	3/8/1981	A large oil spill was found at Berth 414 after PACIFIC QUEEN departed and reportedly cleaned its bilges. The Coast Guard and DEQ were notified.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Zidell Explorations Inc.	4.7	Ship scrapping	9/6/1973	On September 6, 1973, the hull of the USS PRINCETON sank while moored at the Kingsley Lumber dock in Linnton. The hull, which was owned by Zidell, released an estimated 50,000 gallons of heavy black oil directly to the Willamette River. Cleanup activities took at least three weeks and both a state enforcement action and federal suit were brought against Zidell for the incident.	Direct discharge to river	On Scene Commander's Reports
M/V AOMORI WILLOW	4-5	Unknown at this time	5/30/2001	A report to the NRC stated that an approximately 1 gallon of diesel oil was released onto the deck of a vessel then into the Willamette River due to tank overflow during an internal fuel transfer.	Direct discharge to river	NRC Incident Report #567788
M/V CENTURY LEADER	4-5	Freight vessel	4/6/2000	Vessel discharged approximately 1 liter of hydraulic oil to river due to the bursting of a hydraulic seal.	Direct discharge to river	USCG Pollution Report
ANSAC HARMONY	4-5	Unknown	1/26/2003	According to a Coast Guard report, Cowlitz Clean Sweep cleaned up an oil spill in the river in the vicinity of Terminal 4.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
SS BATTLE CREEK VICTORY	4-5	Marine vessel	2/5/1957	In February 1957, an oil spill was observed by the Portland Police Bureau as water and oil were pumped from the SS BATTLE CREEK VICTORY. The vessel was docked at Terminal 4, Pier No. 2. The vessel's agent, Pope & Talbot, informed the police that the spill would be cleaned up.	Direct discharge to river	NARA historical USCG records
Trident Shipping Limited	4-5	Tank leak	4/8/2001	A leak of approximately 50 gallons of IFO 180 occurred on the M/V ASTYPALEA. Leak was a result of cracks in the forward starboard fuel tank of the vessel.	Direct discharge to river	NRC Incident Report and Transmittal, Fed. Proj S01035
Tidewater-Shaver Barge Lines	4-5	Marine transportation company	8/8/1947	In 1947, a release of oil into the Willamette River was observed coming from an unidentified barge operated by Tidewater-Shaver Barge Lines.	Direct discharge to river	Portland Fire Marshal records
Tidewater Barge Lines	4-5, 5-6, 7-8, 8-9, 9-10	Marine transportation company	2/1991, 4/1991, 6/22/1993, 7/16/1993, 6/22/1994, 8/1994, 6/30/1995, 2/10/1999, 3/26/2001, 9/28/2001 and 1/28/2004	Two 1991 NRC database reports involved Tidewater Barge vessels. The first incident involved, M/V LEIRA which released approximately 1 gallon of lubricating oil directly into the Willamette River at an unidentified location. Tank Barge TW 704 released approximately 15 gallons of gasoline into the Willamette River at River Mile 10. In 1993, approximately 10 gallons of gasoline and 2 gallon of fuel oil were released into the river during two separate incidents. A 1994 report stated that approximately 1 gallon of gasoline was released into the Willamette River. A 1995 report to the NRC stated that approximately 5 gallons of oil was released into the Willamette River due to operator error while refueling. A Feb. 1999 report to the NRC stated that approximately 3 gallons of diesel oil was released into the Willamette River from the vessel, DEFIANCE. In March 2001, less than 1 cup of diesel fuel oil was released into the Willamette River during the fueling of a tug due to a leaky hatch on the vessel. In September 2001, a 1-gallon leak of No. 2 diesel from the right collision bulkhead of Barge No. 1 was discovered at the Tosco dock. In January 2004, a report to the NRC stated that an unknown amount of jet fuel (JP-8) was released into the Willamette River from a barge due to an unknown cause.	Direct discharge to river	NRC Incident Reports # 560738, 581299
Tidewater Barge Lines	4.8	Marine transportation company	2/22/2007	One ounce of diesel oil was released into the Willamette River at approx. RM 4.8 from a Tidewater Barge Lines barge due to a leak in a tank.		
Transversal Shipping Company	4-5, 5-6	Shipping company	3/10/1997, April 2001	A March 1997 report to the NRC stated that an unknown amount of oil from M/V SEMENA washed off the deck during a rain storm into the Willamette River. An April 2001 OSFM incident report stated that a Bunker C fuel oil slick had drifted towards the mouth of Terminal 4, Berth 408. The spill was traced to Transversal Shipping across the river. Another incident occurred in April 2001, when a vessel docked at Transversal caught fire. The City's Fire Boat responded and pumped water for five hours. Transversal was identified as an agent for the vessel.	Direct discharge of hazardous substance.	NRC Incident database; Oregon State Fire Marshal database
M/V BIO BIO	5	Marine vessel	3/18/1994	A light sheen was observed in the water around vessel M/V BIO BIO I docked at Berth 415. The source and quantity of the material are unknown.	Direct discharge to river	Port of Portland 104(e) Response for T4 Auto Storage Area

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Not yet identified	5	Unknown	4/11/1982	Diesel spill on the deck of a ship at Berth 414 and released approximately one gallon of oil to the Willamette River.	Direct discharge to river	Port of Portland 104(e) Response for T4 Auto Storage Area
Not yet identified	5	Unknown	3/15/1985	An unknown quantity of oil was released to the Willamette River in the vicinity of Berths 415 and 416.	Direct discharge to river	Port of Portland 104(e) Response for T4 Auto Storage Area
Not yet identified	5	Unknown	9/25/1995	An oily film was observed upriver from Berth 416. The Coast Guard was contacted. The source of the film could not be determined.	Direct discharge to river	Port of Portland 104(e) Response for T4 Auto Storage Area
Toyota	5	Auto import and storage	6/25/1981	An oil release occurred at Berth 415 from a pipe originating at the Toyota plant (quantity not reported).	Direct discharge to river	Port of Portland 104(e) Response for T4 Auto Storage Area
Toyota	5	Auto import and storage	6/4/1995	The culvert between Berths 415 and 416 overflowed during a heavy rain event and caused a soap-like foam to form on the river. The foam extended halfway to the Berth 416 float and was monitored but dissipated quickly with the heavy rain and flow of the river. The Coast Guard was notified and they determined on-site response was not necessary based on the nature of the observations.	Discharge to river via overland flow	Port of Portland 104(e) Response for T4 Auto Storage Area
Unknown	5-6	Pleasure craft	4/28/2008	A NRC incident report stated that there was a discharge of 2 oz. of oil from a vessel due to addent engine oil and accidentally spilling some into the water.	Direct discharge to river	NRC Incident Reports
Advanced American Diving	5-6	Diving and salvage operations	1/23/2005	Overfill of barge at POP, Terminal 4. 5-10 gallons diesel causing sheen on water. Contained in boom	Direct discharge to river	OERS # 05-0173
Advanced American Diving	5-6	Diving and salvage operations	7/29/1998	A report to the NRC stated that a barge disturbed "some kind of contamination" in the bottom of the Willamette River.	In-water disturbance	NRC Incident Report #448107
Gelco Construction	5-6	Road construction	7/13/2005	Discharge occurred during re-lining of a storm drain. Approximately 1 quart of asphalt liner was released through the line and into the river.	Discharge to river via storm sewer	NRC Incident Report #765482
M Cutter	5-6	Towing and mooring	2/5/1996	A report to the NRC stated that an unknown amount of diesel oil was released from the D/B PAUL BUNYUN into the Willamette River due to a previously frozen fuel line.	Direct discharge to river	NRC Incident Reports
M/V ZANIS GRIVA	5-6	Transportation	10/17/2001	A report to the NRC stated that approximately 2 barrels of hydraulic oil were released from the vessel into the Willamette River due to equipment failure.	Direct discharge to river	NRC Incident Report #583407
Keystone Shipping Co.	5-6, 7-8, 8-9	Marine transportation company	8/13/1991, 6/6/1992, 10/17/1995, 3/3/1997, 3/16/1998	A 1991 report stated that approximately 2 gallons of waste oil/lubricating was released into the river when a contractor error opened a bilge valve on the T/S DELAWARE TRADER. In June 1992, the State Fire Marshal reported a ship fire on Keystone's "bulk oil ship," the ATIGUN PASS. The fire was caused when welding torches igniting "paraffin/oil" on the bulkheads. It is not clear from the report whether fire fighting activities flushed contaminated water into the river. A 1995 report to the NRC stated that approximately 1 gallon of oil was released from the tanker KEYSTONE CANYON into the Willamette River due to equipment failure. A 1997 report to the NRC stated that an unknown amount of soot was released from M/V FREDERICKSBURG into the Willamette River when the engines were "fired up" and shot out of the exhaust pipe. In 1998, the Portland Harbor Master responded to a pump room fire aboard Keystone's vessel, S/S FREDERICKSBURG. The vessel was moored at MarCom's dock and being repaired. An operator cutting a bolt from a flange with a blow torch and dropped the bolt into the bilge. The bolt ignited gasoline which was in the bilges. It is not clear from the report what impact the vessel's fire had on the river.	Direct discharge to river	National Response Center; Portland Harbor Master records, PSY Suppl. PA App. F (2006) ^b
Olympic Tug & Barge	6-7, 7-8	Marine transportation company	10/16/2007	Approximately 1 gallon of hydraulic oil was released into the Willamette River from a tug boat at 8010 NW St. Helens Road.	River	NRC 851759
Olympic Tug & Barge	6-7, 7-8	Marine transportation company	5/10/2007	Approximately 4 ounces of lubricating oil was released into the Willamette River from Olympic Tug & Barge's MAX SONDLAND at Olympic Tug and Barge facilities.	River	NRC 834961
Olympic Tug & Barge	6-7, 7-8	Marine transportation company	8/18/2006	Approximately 8 ounces of intermediate fuel oil (IFO) 380 was released into the Willamette River when Olympic Tug & Barge's oil barge BMC 7 was bunkering M/V OAK HARBOR across from Terminal 2.	River	NRC 808285
Olympic Tug & Barge	6-7, 7-8	Marine transportation company	12/18/2008	1 gallon heavy fuel oil and water released from catch basin on a fueling dock into river.	Storm drain to river	NRC 892287
Olympic Tug & Barge	6-7, 7-8	Marine transportation company	10/16/2007	1 quart lubricating oil released to river due to overfilling of lube oil tank on the tug LUCY SONDLAND.	Direct discharge to river	NRC 851752

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Olympic Tug & Barge	6-7, 7-8	Marine transportation company	8/5/1995, 8/7/1995, 6/29/1997, 11/3/1999, 1/28/2002	A 1995 report to the NRC stated that approximately 5-8 gallons of oil was released into the Willamette River and an unknown amount of fuel was released during transfer from a ship to an Olympic barge. A June 1997 report to the NRC stated that approximately 50 gallons of diesel oil was released from the tug LELA JOY into the Willamette River due to a tank overflow. A Nov. 1999 report to the NRC stated that approximately 1 gallon of oil was released from M/V PACIFIC FALCON into the Willamette River during refueling. In 2002, approximately 2 gallons of waste oil discharged to Willamette River after a half-full drum was knocked over when Olympic was moving a heavy winch by crane.	Direct discharge to river	NRC Incident Reports
Kaiser Company, Inc.	6-7	Shipbuilding	1943	In 1943, month/day unknown, fuel oil escaping from vessels at the dry docks [was] attributed to negligence or errors on the carriers” built by Kaiser.	Direct discharge to river	Port of Portland 104(e) Response for Willamette Cove
Kaiser Company, Inc.	6-7	Shipbuilding	7/1/1943	Oil was permitted to discharge into the river when CASABLANCA was at dry dock. Port suspected it was an intentional release due to method of release.	Direct discharge to river	7/19/1945 Letter, Port to Kaiser
Kaiser Company, Inc.	6-7	Shipbuilding	7/28/1943	On July 28, 1943, the Kaiser (carrier) vessel LISCOMBE BAY was believed to have been the cause of a release of oil while on dry dock that caused a fire hazard that stopped all welding and work in the area from 7/30/1943 to 8/2/1943.	Direct discharge to river	Port of Portland 104e Response for Willamette Cove
Not yet identified	6-7	Unknown	1914	In 1914, Pontoon No. 1 sank during a docking.	Possible direct discharge to river	Port of Portland 104e Response for Willamette Cove
OLEUM	6-7	Marine vessel	1951	In 1951, the Tanker Oleum caused unspecified damage requiring cleanup of oil from towers, paint trestles and decks.	Direct discharge to river	Port of Portland 104e Response for Willamette Cove
Police Vessel	6-7	Public enforcement	6/5/2010	A report to the NRC stated that discharge of fuel occurred after the vessel pulled away from the dock with the fuel tank uncapped.	Direct discharge to river	NRC Incident Reports
OSPREY ARROW	6-7	Product transfer	10/22/2003	A report to the NRC stated that approximately 2 gallons of pitch was released from the vessel into the Willamette River due to an equipment failure or malfunction.	Direct discharge to river	NRC Incident Reports
Pacific Northern Oil	6-7	Bulk storage terminal	8/19/1999	A report to the NRC stated that approximately 200 gallons of oil (blend of diesel and bunker oil) was released onto the soil and concrete from an overloaded oil/water separator. It was reported that oil was discharged into the Willamette River.	Direct discharge to river	NRC Incident Reports
SS ILICH	6-7	Marine vessel	1944	In 1944, the Russian SS Ilich “capsized at the inner berth of the south pier at the dry dock and sank in about 46 feet of water” [neither the] “War Shipping Administration, its contractors or the Russians” assumed removal responsibility (Port, June 1944). The Ilich was removed by the U.S. Army Corp of Engineers in 1944.	Possible direct discharge to river	Port of Portland 104e Response for Willamette Cove
SS SUMANCO	6-7	Marine vessel	7/1924	The S.S. Sumanco was dry docked. Damage to the vessel fractured bottom plates of oil tanks allowing oil to escape into the river.	Direct discharge to river	Port of Portland 104e Response for Willamette Cove
YONEUN	6-7	Marine vessel	4/10/1982	A release of oil to the Willamette River occurred from the S.S. YONEUN at Berth 401 (quantity not reported). The slick was estimated at 100 ft. in length & 50 ft. in diameter. Cleanup was conducted by the Coast Guard.	Direct discharge to river	Port of Portland 104(e) Response for T4 S1/S3
Portland General Electric Company	6-7, 7-8, 12-13	Power barge Pole transformer	12/17/1992, 10/12/1993, 5/20/1999, 10/1/2000, 10/26/2004; 10/30/1999	A 1992 report to the NRC stated that approximately 22 gallons of hydraulic oil was spilled with an unknown amount released into the Willamette River via a storm drain. A 1993 report to the NRC stated that a 5-gallon spill of PCB transformer oil occurred when a transformer exploded. An unknown amount of oil was released into a storm drain discharging into the Willamette River. A May 1999 report to the NRC stated that approximately 15 gallons of transformer oil was released into a nearby storm drain and into the Willamette River. The NRC database reported that it is not known whether the release reached the Willamette River. In November 1999, the NRC reported that approximately 3 gallons of oil was released onto the ground from a ruptured truck reservoir line. The spill reached a nearby storm drain and was released into the Willamette River. In October 2000 the sump on Power Barge Rio DaLuz overflowed during heavy rains, discharging approximately 2 gallons of lubricating oil to the river. In October 2004, approximately 30 gallons spilled from a pole transformer containing fluid with 31 ppm PCB, based on September 30, 1986 sampling. Oil initially discharged to ground and subsequently to the catch basin.	Discharge of material to river via storm drain	NRC Incident Reports; NRC Incident Report #739571

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Sause Brothers	6-7, 7-8, 9-10	Hydraulic line failure	7/2/1992, 8/18/1993, 12/13/1996, 4/2/2006	A 1992 report to the NRC stated that an unknown amount of "hot" oil was release into the Willamette River. A 1993 report to the NRC stated that approximately 1 cup of oil was released from a pinhole leak in a tank on the tank barge NESTUCCA NO. 569658 into the Willamette River. A 1996 report to the NRC stated that approximately 5 gallons was released from the tug TITAN into the Willamette River due to overfueling. In 2006, a 1-gallon release of hydraulic oil at facility dock from shore crane was due to a broken line. "Old age" of hydraulic line cited as cause of release.	Direct discharge to river	NRC Incident Reports; NRC Incident Report #792758
Railroad Bridge	~7	Unknown	8/20/2001	Oil sheen observed	River	OERS # 01-2089
Boart Longyear	7.1, west bank	Drill Rig	8/19/2009	Release of hydraulic oil from drill rig mounted on a barge. Oil discharge was due to equipment failure, an o-ring failed on equipment. Discharge was contained on barge deck and in moon pool where drill unit goes through barge. Clean up completed with no material escaping to river water.	No discharge to river	NRC 915873
Alaska Tanker Company	7-8	Transportation	6/5/1999	It was reported that a release of an unknown amount of oil was observed coming from the vessel M/V DENALI at Berth 314 on the river side.	Direct discharge to the river	PSY Suppl. PA (2006) ^a
American Trading Transportation	7-8	Transportation company	8/13/1991	In 1991, approximately 2 gallons of waste oil/lubricants was released to the river from the T/S DELAWARE TRADER, owned at the time by American Trading Transportation Co.	Direct discharge to the river	PSY Suppl. PA, App. F (2006)
Ballard Diving & Salvage Inc.	7-8	Ship repair	8/22/2003	A report to the NRC stated that approximately 10 gallons of hydraulic oil was released into the Willamette River from a hydraulic line that was cut during the polishing of propellers on a military vessel (the USNS SISLER Navy vessel).	Direct discharge to the river	NRC Incident Reports
Central Gulf	7-8	Transportation company	7/8/1996	In 1996, an unknown amount of oil leaked out the stern tube of the vessel GREEN HARBOUR into the river.	Direct discharge to the river	PSY Suppl. PA, App. F (2006)
Dynea Overlays Inc.	7-8	Provider of bonding and surface solutions	4/23/2002	A report to the NRC stated that approximately 2 liters of unknown oil type was released into the Willamette River from a vessel due to unknown causes.	Direct discharge to the river	NRC Incident Reports
LONG BEACH and EXXON BENICIA	7-8	Petroleum product distribution company	8/24/1988, 4/17/1991, 3/15/1993	Exxon is the owner of the vessel LONG BEACH which was being repaired at PSY. In 1988, a contractor released sandblast grit and paint chips into the river. An April 1991 report stated that NMIW illegally discharged approximately 150-200 gallons of lubricating oil into a storm drain that discharged into the river from Exxon's vessel EXXON BENICIA. In 1993, a release of approximately 0.01 gallon of Bunker C oil was released into the river from the T/S EXXON BENICIA.	Direct discharge to the river	PSY Suppl. PA App. F
Foss Environmental	7-8, 8-9	Emergency response contactor including cleaning catch basins and oil/water separators	3/9/1995,1/26/1998, 7/13/2001	A 1995 report to the NRC stated that less than 1 gallon of hydraulic oil was released onto asphalt then into the Willamette River from a power steering hose on a vehicle. A January 1998, NRC report stated that approximately one-half gallon of "bilge slop" was released into the river from a vacuum truck vent. The 2001 incident discharged approximately 5 gallons of slop oil due to clogged vacuum line.	Direct discharge to river; indirect discharge to river through separator.	NRC Incident Reports, NRC Incident Report 572917
Garwood Oil	7-8	Petroleum product distribution company	12/30/2003	A report to the NRC stated that approximately 20 gallons of fuel oil was released from a fuel tank on a tractor trailer due to a transport accident. It is not known whether the release reached the Willamette River.	Possible indirect discharge to stormwater system.	NRC Incident Reports
General Steamship Corp.	7-8 8-9 9-10	Marine construction and transportation	7/7/1992, 3/14/1994, 9/16/1996, 6/15/2000	A 1992 report to the NRC stated that an unknown amount of oil was released from M/V BELFOREST into the Willamette River. A 1994 report to the NRC stated that approximately 0.5 cup of motor oil was released from M/V AMERICAN DYNASTY into the Willamette River from a 5-gallon bucket that was knocked over. A 1996 report to the NRC stated that an unknown amount of oil was released from the bulk carrier TAI SHING into the Willamette River due to a leaking bilge or cargo tank. The same day, the vessel ALASKAN JEWEL discharged 1 barrel of hydraulic oil while testing the emergency fire pump. On June 15, 2000, a spill of approximately 10 gallons of lubricating oil was released from the M/V TALL [PAUL] BUCK into the river as reported to the NRC. Also, on June 15, there was a discharge of less than 1 gallon of lube oil caused by crew members of the M/V TALL BUCK over-pressurizing the stern tube. This was discharged to the Swan Island Lagoon.	Direct discharge to river	NRC Incident Reports; NRC Incident Reports # 531544, TALL BUCK Incident Report # 532237, Tall Buck: ERNS Database/NRC Incident No. 532225, PSY Suppl. PA, App. F (2006)
Hickey Marine	7-8	Vessel repair	8/29/1996	A report to the NRC stated that approximately 2 gallons of oil was released from the crane barge SEA LION into the Willamette River due to a broken air compressor hose.	Direct discharge to river	PSY Suppl. PA, App. F (2006)
Industrial Marine, Inc.	7-8	Ship repair	10/17/2006	A report to the NRC stated that during spray painting operations on the bridge wing of M/V CHEMICAL EXPLORER, the over sprayer landed in the Willamette River due to operator error. Approximately one-half cup of "International Paint (called 99)" was released into the Willamette River.	Direct discharge to river	NRC Incident Reports
K-Sea Transportation	7-8	Tank overflow	11/10/2007	Approximately 2 gallons of fuel discharged to the river due to valve misalignment on the Tug SCORPIUS.	Direct discharge to river	NRC Incident Report 854198
Lindblad Expeditions	7-8	Unknown at this time	4/25/2003 and 5/10/2006	An April 2003 NRC report stated that approximately 1 pint of oil was released from a bilge manifold as a result of flushing a leaking hot water heater discharge overboard from the vessel, LAZETTE. In May 2006, an NRC report stated that a fitting broke on a hydraulic crane which resulted in the release of approximately 1 pint of hydraulic oil into the Willamette River.	Direct discharge to river	NRC Incident Reports #643271, 796683

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Linden Farms	7-8	Operated a poultry processing facility	5/3/1998	A 1998 report stated that guts and grease were observed discharging from a storm drain at the chicken farm processing facility.	Direct discharge to river	LWG Programmatic Work Plan (referenced as OERS 98-1032)
Marine Vacuum Service, Inc.	7-8	Tank, bilge and boiler cleanup	Potential releases during occupancy from 1993 to 1995	Marine Vacuum leased Bay 1 including two office spaces, a shop, and an adjacent parking lot at the PSY. Also Marine Vacuum conducted overwater activities as part of its operations. Environmental inspections performed in 1995 and 1996 determined the following: (1) floor and walls of the shop were contaminated with oil and it was noted that the shop had two floor drains; (2) parking lot was stained with oil; and (3) three drums of unknown substance were abandoned in Bay 1.	Possible indirect discharge to stormwater system.	PSY Suppl. PA (2006)
Military Sealift Command	7-8	Military transportation	12/1/2004	Approximately 5 gallons of oil was released into the river when a Doppler speed log was replaced on the USNS HENRY K. KAISER.	Direct discharge to river	PSY Suppl. PA, App. F (2006)
O'Briens Oil Pollution	7-8		9/10/2005	A report to the NRC stated that approximately 1 quart of No. 2 diesel oil was released into the Willamette River from a pipeline due to unknown causes.	Direct discharge to river	
Pax Company of Utah (division of Cenex)	7-8	Farm supply company	5/30/1980	Release from dumping 5-7 barrels (225 gallons) of various chemical wastes (including herbicide 2,4-D) into storm sewer manhole in Mock's Landing with some material discharged to the Willamette River; penalty of \$1,000 assessed to Cenex by DEQ.	Discharge of material to river via storm drain	Port of Portland 104(e) Response for SIUF/B311
Northwest Marine Iron Works	7-8	Vessel construction and repair	5/13/1982, 8/25/1988, 10/19/1988, 12/12/1990, 5/23/1991	A 1982 release of approximately 2 gallons of lube oil into the river. In August 1988, NMIW staff were observed dumping sandblast sand and wastewater into the river from a vessel. In October 1988, NMIW staff reported disposed of sandblast sand into river at night. In 1990, sandblast grit was released into the river. A May 1991 report to the NRC stated that approximately 300 gallons of lubricating oil was released from the facility, with 200 gallons spilling into the Willamette River.	Direct discharge to river	NRC Incident Reports
Rainier Petroleum	7-8	Transportation	8/7/2006	An approximate 15-gallon oil spill occurred at the McCall facility involving Brix Maritime Barge #4. Spill caused by operator error (flow "kicked back" causing an overflow). Brix Maritime is identified as operator of the vessel, while Rainier Petroleum is listed as the "managing owner" and Marine Equipment Leasing is identified as the owner.	Direct discharge to river	NRC Incident Report #807033
Roadway Express	7-8	Freight transfer and delivery	2/20/1990	A report to the NRC stated that during a rain storm an unknown amount of oil was being washed into storm drains discharging into the Willamette River. The report stated that a leak developed in a tractor trailer fuel line.	Discharge of material to river via storm drain	NRC Incident Reports
Salmon Bay Barge Line, Inc.	7-8	Fuel transfer	6/29/2000	A 2-gallon discharge of diesel fuel occurred due to overfilling of fuel tank on tug JESSE.	Direct discharge to river	NRC Incident Report #533913
Sea Coast Towing	7-8	Transportation	3/19/2000, 5/8/2001, 8/10/2003 and 10/10/2005	In March 2000, approximately 1 gallon of diesel fuel was released into the Willamette River from the tug vessel JOHN BRIX, which had a leak from its fuel vent. In May 2001, a report to the NRC stated that approximately 3 gallons of diesel fuel was released into the Willamette River during a tank to barge overflow. In August 2003, a report to the NRC stated that approximately 100 gallons of jet fuel (JP-8) was released into the Willamette River during a tank to barge overflow. An October 2005 report to the NRC stated that approximately 1 tablespoon of hydraulic oil was released into the Willamette River from a barge due to an equipment failure.	Direct discharge to river	USCG Pollution Report; NRC Incident Reports #565304, 653457; NRC Incident Reports
Sea-Land Service, Inc./ Sea-Land Transport Co. and SEA-LAND NAVIGATOR, SEA-LAND HAWAII	7-8	Transportation	Potential releases during occupancy from 1963 to 1974; in-water spill on 10/7/1990 and 12/23/1990	Sea-Land Service leased Bay 10 in Building 4 for several years. Building 4 had a series of floor drains which collected wastewater then discharged through a private outfall into the river downstream of Berth 314; also stormwater and wastewater discharged through private outfall in Dry Dock #3. Several vessels owned by Sea-Land have been brought to the PSY dry docks for repair. Both Building 4 and the dry docks are subjects of environmental investigations for contamination from various hazardous substances. In October 1990, while cleaning the aft of the SEA-LAND HAWAII, Lockwood Industries released oil, dust, and paint into the river causing a sheen on the surface. In December 1990, an unknown amount of foam was released into the river during the repair of the vessel NAVIGATOR, owned by Sea-Land.	Possible indirect discharge to stormwater system; also direct discharge from spill.	PSY Suppl. PA App. F (2006); Sewer map at PUB0006726
Sound Freight Lines, Inc.	7-8	Fuel transfer/tug operator	11/6/2007	The tug BLACK HAWK discharged approximately 50 gallons of diesel to the river due to a leaky valve.	Direct discharge to river	NRC Incident Report #853814
M/V SEA RIVER NORTH SLOPE; S/R GALENA BAY	7-8	Transportation	7/6/1994, 10/18/2001	SeaRiver Maritime is the owner of the vessel, M/V SEA RIVER NORTH SLOPE. It was reported that a stern tube on the vessel released approximately 2 gallons of turbine oil into the river. In 2001, a release of approximately 1 pint into the river causing a sheen from a leak in a lube oil cooler on SeaRiver's vessel S/R GALENA.	Direct discharge to river	PSY Suppl. PA (2006)
SS BARBARA	7-8	Marine vessel	6/21/1957	On June 21, 1957, a "large amount of bunker fuel" was released from the dry dock into the river due to operator error by an employee of WISCO while repairing the SS BARBARA. Olympic Steamship Co. was identified as the vessel local agent by the U.S. Coast Guard.	Direct discharge to river	NARA historical USCG records
Tanker Pacific Management	7-8	Transportation	6/9/2000, 7/9/2000	Two separate releases occurred of an unknown amount of oil into the river during the testing of fire equipment aboard the M/V ALASKAN JEWEL. Foam was mixed with hydraulic oil, discharge on deck and over the side.	Direct discharge to river	PSY Suppl. PA, App. F (2006)

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Trans Marine Navigation Corporation	7-8	Marine transportation	6/25/2001	A release was reported of approximately 1 gallon or 5 liters of marine oil gasoline from a faulty cap of a sounding pipe on the vessel M/V DANSUS.	Direct discharge to river	PSY Suppl. PA, App. F (2006), USCG Pollution Report
Transoceanic Shipping Company	7-8	Provider of bonding and surface solutions	1/19/2001, 4/13/2002	A report to the NRC stated that approximately 0.5 gallon of hydraulic oil was released into the Willamette River due to a ruptured hose in the blower thruster on the cable laying ship GLOBAL SENTINAL. In 2002, approximately 2 liters of unknown oil was released into the river from the vessel TYCOM RELIANCE.	Direct discharge to river	NRC Incident Report #554151
Tyco Telecommunications	7-8	Oceanic cable vessel	4/13/2002	M/V TYCOM RELIANCE discharged approximately 2 liters of scar oil to the river due to suspected seal slippage.	Direct discharge to river	USCG Pollution Report
U.S. Army	7-8	Transportation	1/26/1993	Based on Internet research it appears that the U.S. Army was the vessel owner in 1986. In 1993, a release of oil was reported from the SS AUSTRAL LIGHTNING onto the pier at Berth 312. It is not clear whether the oil was discharged into the river.	Possible direct discharge to river	PSY Suppl. PA App. F (2006)
United Parcel Service	7-8	Package delivery depot and equipment maintenance facility	4/28/1993	A report to the NRC stated that approximately 35 gallons of hydraulic oil was released onto the ground when a garbage compactor's hydraulic fitting broke. An unknown amount of oil was released into the Willamette River.	Direct discharge to river	NRC Incident Reports
Tidewater Barge Lines	7.5-7.9	Marine transportation company	10/3/1998	200 gallons unleaded gasoline released into river when dockline broke while pumping to or from Tidewater Barge Lines barge TRI-CITIES VOYAGER	Direct discharge to river	NRC 458351
Tidewater Barge Lines	8.3	Marine transportation company	8/21/1999	One gallon of hydraulic fuel released due to equipment failure.	Direct discharge to river	USGS, 2001. Letter of Warning - 8.21.1999 Incident
Tidewater Barge Lines	8.6-8.8	Marine transportation company	6/28/1976	An unknown quantity of gasoline was released from a Tidewater barge at the Shell Oil docks.	Direct discharge to river	DEQ, 1976. Spill report for 6.28.1976 Incident.
Albina Engine and Machine Works	8-9	Ship repair	4/8/1971	Slick reported at shipyard. No additional information available.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Albina Engine and Machine Works	8-9	Ship repair	6/11/1975	DEQ observed fugitive emissions from Albina Engine & Machine operation of sandblasting equipment and the uncontrolled storage and handling of material. In a letter dated 7/1/1975, DEQ instructed Albina Engine to cease sandblasting operations.	Possible direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
American Classic Voyages	8-9	Marine vessel	11/11/2000	Vessel pumping slops to a pump truck and hose broke behind truck, releasing material onto dock; report indicates 2 gallons of bilge slop released to Willamette River; cleanup crew called and booms/sorbents applied.	Direct discharge to river	ERNS Database, Incident No. 547979; Port of Portland 104(e) Response for SIUF/B311
American Heavy Lift Shipping Co.	8-9	Marine vessel	4/6/1994	A 1994 report to the NRC stated that approximately 30 gallons of waste oil was released from the vessel M/V KING into the Willamette River due to a tank overflow.	Direct discharge to river	NRC Report #233673
American Trading Transportation	8-9	Marine vessel	1991	1991, month/day unknown. 2 gallons of waste oil/lubricants released from F/V Pacific Explorer	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
AMERICAN VETERAN	8-9	Marine vessel	2/2/1992	Oil was observed in Swan Island Lagoon. It appeared that the source of the oil was vessel AMERICAN VETERAN. The vessel left Berth 303 and 304 without cleaning up or containing spill.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Barge F 100	8-9	Marine vessel	2/20/1970	Aerial photographs show release of oil emanating from the Navy Dry Dock. Barge F 100 was repaired on the Navy Dry Dock that date.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
BARGE NESTUCCA	8-9	Marine vessel	3/29/1993	A Light gray to silvery substance was observed in water at Berth 302 around THE BARGE NESTUCCA. There were 15 to 20 patches, each patch was around 2 feet by 2 feet.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
BP ARCO / MV ARCO SPIRIT	8-9	Marine vessel	5/14/2000	Release of crude oil from M/V ARCO SPIRIT at Berth 312; cause of release unknown; small sheen observed; unknown quantity of material released to Willamette River; contractor and diving crew called for cleanup.	Direct discharge to river	ERNS Database, Incident No. 528969; National Response Center #528969; Port of Portland 104(e) Response for SIUF/B311
BT ALASKA	8-9	Marine vessel	5/19/1993	While heavy sandblasting was occurring on BT ALASKA, a dust cloud was observed settling on top of the water.	Possible direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
CAPE BLANCO	8-9	Marine vessel	2/25/1993	Dust reported accumulating on the water at Berth 314 near the CAPE BLANCO.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
CAPE BOVER	8-9	Marine vessel	3/1/1992	A fuel spill about 40 yards in length and 20 yards in width was observed between Berth 305 and the vessel CAPE BOVER. The Coast Guard was notified.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Cascade General / CAPE ORLANDO	8-9	Ship repair / Marine Vessel	8/19/1994	Unknown colored substance within containment boom of CAPE ORLANDO. Cascade General labor foreman advised they would have it cleaned up.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Cascade General / CAPE ORLANDO	8-9	Ship repair / Marine Vessel	8/30/1994	A sheen was observed at the stern of CAPE ORLANDO at Berth 304 outside of Cascade General's sea curtain. The sheen was reported to Coast Guard.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Cascade General / KISKA TAE 35	8-9	Ship repair / Marine Vessel	12/2/2002	Release of bilge waste during pumping of slop tank of USNS KISKA TAE 35 (tank was overfilled); unknown quantity of material released to Willamette River.	Direct discharge to river	ERNS Database, Incident No. 630598; Port of Portland 104(e) Response for SIUF/B311
Cascade General / U.S. Army Corps of Engineers	8-9	Ship repair / Marine Vessel	12/19/2000	Release from repair on a hydraulic line on U.S. Army Corps Dredge ESSAYONS; approx. 100' x 5' rainbow-colored sheen observed; report indicates 2 gallons hydraulic oil released to Willamette River; booms applied.	Direct discharge to river	ERNS Database, Incident No. 551416; National Response Center #551416; OERS 0-2993; Port of Portland 104(e) Response for SIUF/B311
Cascade General Inc.	8-9	Ship repair	5/12/1993	A foamy, colored substance was observed in the water between pier and dry dock. Cascade General was notified.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Cascade General Inc.	8-9	Ship repair	8/2/1994	A diesel sheen was observed at the head of Dry Dock 3.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Cascade General Inc.	8-9	Ship repair	9/16/1996	Oil sheen of unknown volume reported.	Direct discharge to river	LWG Programmatic Work Plan (referenced as OERS 96-2634)
Cascade General Inc.	8-9	Ship repair	12/21/1999	Sheen observed under pier. No additional information available.	Direct discharge to river	LWG Programmatic Work Plan (referenced as OERS 99-2936)
Cascade General Inc.	8-9	Ship repair	10/18/2001	Approx. 100' x 15' sheen observed; estimated 2 pints of unknown petroleum product released to Willamette River from an unidentified source; Cascade General deployed booms to contain material.	Direct discharge to river	National Response Center #583585; Also reported as ERNS Database, Incident No. 583575; National Response Center #583575; Port of Portland 104(e) Response for SIUF/B311
Cascade General Inc.	8-9	Ship repair	11/9/2002	Sheen on Willamette River. No additional information available.	Direct discharge to river	LWG Programmatic Work Plan (referenced as OERS 2-2728)
Cascade General Inc.	8-9	Ship repair	2/17/2005	Report indicates 1 gallon of oil released from vessel to the Willamette River; cause unknown; booms applied and West Coast Marine hired to do cleanup.	Direct discharge to river	NRC Report #750373; Port of Portland 104(e) Response for SIUF/B311
Cascade General Inc. & ExxonMobil	8-9	Ship repair / Marine Vessel	1/28/1992	Oil sheen was observed in water at bow of EXXON BATON ROUGE.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Cascade General Inc. / TONSINA	8-9	Ship repair / Marine Vessel	7/2/1992	Sandblast dust was observed forming on surface of water between the vessel TONSINA and the pier.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Chevron / WSI / Hydroblast	8-9	Ship repair / Marine Vessel	3/6/1992	DEQ received notification that a WSI contractor (Hydroblast) discharged 6,000 to 7,000 gallons of water containing paint chips from hydroblasting the deck of the CHEVRON CALIFORNIA.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
CHEVRON CALIFORNIA	8-9	Marine vessel	3/16/1993	A light gray film of unknown substance was observed at Berth 302 within the sea curtain of CHEVRON CALIFORNIA. CHEVRON CALIFORNIA reported that approximately 1 gallon of light lubricating oil was in the water and that it did not come from the ship.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Chevron Corporation	8-9	Marine vessel	6/18/1986	Estimated less than 1 gallon hydraulic oil released to Willamette River. Hydraulic line parted on the M/V CHEVRON LOUISIANA; report indicates less than 1 gallon hydraulic oil released to Willamette River.	Direct discharge to river	ERNS Database, Incident No. 48780; Port of Portland 104(e) Response for SIUF/B311
Chevron Corporation	8-9	Marine vessel	9/4/1990	Release of oil from the vessel CHEVRON OREGON at Berth 312.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Chevron Corporation	8-9	Marine vessel	4/9/2000	M/V CHEVRON COLORADO controllable pitch/prop seal failed causing hydraulic oil release; approx. 5' x 10' sheen observed; unknown quantity of oil released to Willamette River; area was preboomed.	Direct discharge to river	ERNS Database, Incident No. 525488; OERS 0-770; Port of Portland 104(e) Response for SIUF/B311
Chevron Corporation	8-9	Marine vessel	6/18/2003	Release of hydraulic oil from vessel.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Chevron LUBE QUEST	8-9	Marine vessel	6/12/1992	An approximately 80 to 100 feet by 6 feet wide fuel-type substance, oil or possibly petroleum, was observed along the pier. The Coast Guard was notified. Source was suspected as the vessel LUBE QUEST.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Chevron LUBE QUEST	8-9	Marine vessel	6/16/1992	An oil streak was observed coming from Chevron LUBE QUEST on the other side of the Lagoon.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
ExxonMobil	8-9	Marine vessel	5/4/1991	Release of sandblast grit into river from EXXON LONG BEACH.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Freighters, Inc. / M/V LUMBER QUEEN	8-9	Marine vessel	5/2/1971	Release of oil from vessel under repair. Slick from M/V LUMBER QUEEN observed at shipyard (quantity not reported).	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
General Steamship / F/T American Dynasty	8-9	Marine vessel	3/15/1994	Release of hydraulic oil. Five-gallon bucket knocked over side. M/V AMERICAN DYNASTY Release of hydraulic oil from bucket knocked over on F/T AMERICAN DYNASTY while at Berth 302; 10' x 10' sheen observed; report indicates 0.5-1 cup hydraulic oil released to Willamette River; booms and sorbent pads deployed.	Direct discharge to river	ERNS Database, Incident No. 230056 & 230087; National Response Center #230087 & #230056; Port of Portland 104(e) Response for SIUF/B311
General Steamship Company	8-9	Marine vessel	6/17/1993	M/V BOGASARI LIMA/line ruptured while transferring product, lubricating oil.	Direct discharge to river	NRC Report #180939 & NRC Report #180932
General Steamship Company	8-9	Marine vessel	2/25/1994	Unknown sheen surrounding vessel, M/V TAI SHING.	Direct discharge to river	NRC Report #223424
General Steamship Company	8-9	Marine vessel	2/11/1997	Unknown sheen, no longer visible. General Steamship vessel in area.	Direct discharge to river	NRC Report #376272
General Steamship Company	8-9	Marine vessel	6/23/1997	Unknown rainbow sheen 50 x 50 ft.	Direct discharge to river	NRC Report #392439
GRAND CANYON STATE	8-9	Marine vessel	5/5/1992	Oil surrounding the vessel GRAND CANYON STATE was observed to be moving towards Berth 306 where the CAPE BRETON was laid up. The material was reportedly dark in some areas with bubble shapes.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Kaiser Company, Inc.	8-9	Shipbuilding	5/10/1946	Sludge observed in Swan Island Basin (lagoon), reportedly from dumping from moored ships (quantity not reported); Kaiser Co. also reported Navy personnel using dump adjacent to Naval barracks for deposit of sludge.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
KENAI	8-9	Marine vessel	8/18/1991	A crane operator observed someone from the vessel KENAI dump unknown materials over the side. The on-duty guard could not see anything in the water.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Keystone Shipping Co. / BMC-4	8-9	Marine vessel	10/28/1992	Material was discovered to be leaking during transfer of diesel from T/B BMC-4 to tanker KEYSTONE CANYON Berth 313; amount released reported as unknown; boom had been predeployed.	Direct discharge to river	ERNS Database, Incident No. 142358; National Response Center #142358; Port of Portland 104(e) Response for SIUF/B311
LURLIME	8-9	Marine vessel	1/19/1993	Crude oil from the deck of the vessel LURLIME spilled onto the deck of Dry Dock 4. The spill was contained by plugging drains of dry dock and cleaned up with dry sand and absorbent diapers. None of the oil went into the water.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
USNS Carl Brashear	8-9	Transportation	7/13/2009	A report to the NRC stated that there was a release of 5 gallons of "A Triple F" from a sprinkler to the drain onboard the vessel due to an operator error while installing "A Triple F" switches.	Direct discharge to river	NRC Incident Reports
HMI Beneton Reef	8-9	Tanker	9/16/2008	A report to the NRC stated that duck grease was poured down the drain and the grease was pumped overboard via grey water discharge.	Direct discharge to river	NRC Incident Reports
M/V COLUMBIA	8-9	Passenger ferry	4/27/2005	In 2005, a release of unknown materials caused a sheen on the river from the outboard area of the M/V COLUMBIA, a vessel owned by the Alaska Department of Transportation.	Direct discharge to river	PSY Suppl. PA, App. F (2006)
M/V CSO CONSTRUCTOR	8-9	Marine pipe laying vessel	9/15/1998	In 1998, a release of unknown oil from the vessel created a 10 m ² sheen on the river.	Direct discharge to river	PSY Suppl. PA, App. F (2006)
Maersk Line Limited	8-9	Marine vessel	10/1/1990	October 1990, while cleaning the aft of the SEA-LAND HAWAII a contractor released oil, dust and paint in the river causing a sheen on the surface.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
NORTHERN LIGHT	8-9	Marine vessel	3/18/1993	A 30 x 50 feet patch of gray unknown substance was observed in the water at the stern of the NORTHERN LIGHT.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Northwest Aggregates Co.	8-9	Transportation	3/3/2004	A report to the NRC stated that approximately 14 quarts of gear oil was released from a gear box on a conveyor belt when the conveyor belt broke and the gear box fell into the Willamette River.	Direct discharge to river	NRC Incident Reports
Northwest Marine Iron Works	8-9	Ship repair	9/11/1990	Oil was observed at Berth 304 between bents 50-53.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Northwest Marine Iron Works	8-9	Ship repair	12/9/1990	Oil and debris observed in water; other report indicates material was a milky white substance.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Northwest Marine Iron Works	8-9	Ship repair	8/20/1991	Ballast water observed coming from the vessel SIERRA MADRE. Northwest Marine was the contractor.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Northwest Marine Iron Works	8-9	Ship repair	8/5/1992	A red sandblasting material was observed in water at Dry Dock 3.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Northwest Marine Iron Works	8-9	Ship repair	10/19/1998	DEQ complaint that North West Marine Iron Works while working on the vessel the GOLDEN GATE dumped sandblast sand in the river at night.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Northwest Marine Iron Works & ExxonMobil	8-9	Ship repair	4/8/1991	Large quantities of sandblast sand was washed into river by Northwest Marine while working on the EXXON BENICIA. No additional information available.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Northwest Marine Iron Works / SKIPANON / Barge BMTB 332	8-9	Ship repair / marine vessel	3/27/1992	NW Marine was sandblasting barges SKIPANON and BMTB332. Sandblast material was observed in the water at the head of Dry Dock 3. The problem went on for a few days.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	4/27/1986	Tank ship placed back in water and sheen observed; report indicates 1/2 cup crude oil released to Willamette River; material cleaned up.	Direct discharge to river	ERNS Database, Incident No. 46950
Not yet identified	8-9	Unknown	6/11/1987	32-ft boat sank; report indicates 20 gallons diesel fuel released to Willamette River; cleanup conducted with booms and sorbent pads.	Direct discharge to river	ERNS Database, Incident No. 61769; Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	8/26/1988	Oil on river observed off Freightliner Corp.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	7/26/1990	Oil was observed in the water outside of the curtain at Berth 314.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	9/19/1990	White paint observed in water approximately 25 feet wide at Berth 305.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	11/9/1990	Diesel spill from storm drain.	Discharge of material to river via storm drain	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	11/11/1990	Heavy oil sheen reported around Dry Docks 3 & 4 in the area of the small boat basin; source not related to PSY or contractors; no additional information available.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	11/13/1990	Oil sheen observed, likely originated from refueling LCUs. Did not appear to be substantial.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	12/7/1990	Spill occurred from an overflow during refueling/bunkering operations.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	12/15/1990	Foamy material observed on water; reportedly originated from testing fire suppression equipment.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	3/1/1991	Fisherman observed oil slick outboard from tankers at the shipyard. The spill was reported to DEQ.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	8/8/1991	Diesel spill flowing into the shipyard. Appeared to be coming from across the river.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	8/17/1991	A green substance resembling paint was observed in the water between Berth 311-314.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	9/6/1991	A diesel spill occurred between Berth 312 and 313, 40 to 60 feet in diameter outside the sea curtain.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	10/2/1991	Sandblast sand in water.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	10/12/1991	Oil sheen (diesel) observed. No additional information available.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	11/6/1991	Oil slick observed. No additional information available.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	11/30/1991	Yellowish sheen observed (storm drain).	Discharge of material to river via storm drain	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	12/21/1991	Oil sheen observed. No additional information available.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	1/11/1992	Oil sheen observed.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	2/21/1992	Oil sheen observed on water.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	2/23/1992	A scaly, scummy substance that resembled old paint was observed in the river. It had a translucent appearance.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Not yet identified	8-9	Unknown	2/27/1992	A thick oil spill (reported as black and white) was observed at Berth 305. The Coast Guard was notified, but indicated it wasn't enough to clean up.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	3/11/1992	Sandblast material was observed in the lagoon extending from Dry Dock 1 to Berth 306.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	3/12/1992	Oily substance observed on water at Berth 311. Coast Guard was notified.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	3/19/1992	Orange colored material observed.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	3/24/1992	An oily sheen observed at Berth 312. The Coast Guard was notified.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	3/27/1992	A heavy blue sheen of oil was observed at Pier A and a small amount of a similar sheen was observed at Pier B at the head of Dry Dock 4. The Coast Guard was notified.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	4/1/1992	Sandblast grit observed in water.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	4/2/1992	Sandblast grit was observed being washed into the river.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	4/2/1992	Orangish material observed.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	4/29/1992	A spill of fuel approximately 20 feet by 150 feet was observed on the water at the west end of Dry Dock #3. WSI cleaned it up and the Coast Guard was notified.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	5/6/1992	Oily sheen observed from runoff.	Discharge of material to river via storm drain or overland flow.	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	5/12/1992	Oil sheen observed.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	7/2/1992	An oil spill occurred between the Dry Dock and Pier D at pilings 24-29. The Coast Guard was notified.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	10/7/1992	Oil spill observed. The source appeared to be downstream and was deposited in shipyard by winds.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	10/8/1992	Sheen observed in lagoon; type of material, quantity and source not known.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	12/12/1992	An approximately 20-ft wide and approximately 2 miles long sheen was observed. The material appeared to be lighter weight than diesel. The Coast Guard was notified and determined cleanup was not necessary.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	2/14/1993	A sheen with an approximately 50 yards long and 20 to 30 feet wide area with old and new oil was observed. The Coast Guard was notified. No additional information was available.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	2/25/1993	Film observed on water near Dry Dock 1.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	3/8/1993	An oily substance was observed in the water on the portside of Dry Dock 4. The Coast Guard was notified.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	3/9/1993	Two areas (10 x 3 feet and 15 x 7 feet) of reddish-pink substance were observed in the water.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	6/22/1993	A bright multi-colored substance was observed at Berth 305. The substance was 120 feet long and approximately 20 to 30 feet wide.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	8/4/1993	A 100 x 20 foot patch of sandblast material was observed outside of the sea curtain/oil containment boom at Berth 313. Dry Dock 4 was covered by the same reddish substance.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	9/9/1993	Sand blast scum (approximately 15 to 25 feet wide and 300 to 400 feet long) was observed on top of the water. It was reported to Cascade General and they reported that it would sink to the bottom.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	11/2/1993	Release of chicken fat/clay mixture near Berth 302 to Berth 305.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Not yet identified	8-9	Unknown	8/2/1994	5' x 5' sheen observed in lagoon off of U.S. Navy & Marine Corporate Reserve Center. Caller indicated source could be a remediation site he/she was working on. Boom deployed to contain the material.	Direct discharge to river	ERNS Database, Incident No. 253123
Not yet identified	8-9	Unknown	6/25/1996	Sheen observed in the lagoon.	Direct discharge to river	LWG Programmatic Work Plan (referenced as OERS 96-2014)

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Not yet identified	8-9	Unknown	8/14/1996	A substance that appeared to be glue was found coming out of a storm drain, entering the lagoon at Cascade General/USCG area of the Swan Island Lagoon.	Discharge of material to river via storm drain.	LWG Programmatic Work Plan (referenced as OERS 96-2393)
Not yet identified	8-9	Unknown	10/8/1996	During refueling a work boat from shoreside, the surge suppressor failed. No cleanup. Product dissipated.	Direct discharge to river	LWG Programmatic Work Plan (referenced as OERS 96-2852)
Not yet identified	8-9	Unknown	5/31/1997	Approx. 1/4 mile x 2000' rainbow-colored sheen observed; unknown quantity of unknown oil released; source appeared to be coming from upriver; area from which sheen observed was preboomed.	Direct discharge to river	ERNS Database, Incident No. 389384
Not yet identified	8-9	Unknown	11/9/1998	Sheen on river from outfall. USCG determined it to be unrecoverable.	Discharge of material to river via storm drain	LWG Programmatic Work Plan (referenced as OERS 98-2681)
Not yet identified	8-9	Unknown	11/10/1998	Oil coming from outfall M-1. BES boomed and was looking for source.	Discharge of material to river via storm drain	LWG Programmatic Work Plan (referenced as OERS 98-2693)
Not yet identified	8-9	Unknown	4/5/2000	Approximately 0.5 gal released to water.	Direct discharge to river	LWG Programmatic Work Plan (referenced as OERS 0-741)
Not yet identified	8-9	Unknown	5/2/2000	MVA with 80 gallons of diesel going to a storm drain - semi leaking. Drain is 500 - 1000 yards from the river. Fire boat on scene; product not yet visible on river. BES en route. USCG contacted.	Discharge of material to river via storm drain	LWG Programmatic Work Plan (referenced as OERS 0-961)
Not yet identified	8-9	Unknown	11/15/2000	Unknown material resembling blast grit observed "floating" near dock - sinks when touched.	Direct discharge to river	LWG Programmatic Work Plan (referenced as OERS 0-2730)
Not yet identified	8-9	Unknown	1/31/2001	Light sheen discharge from outfall - 50'X50'. No additional information available.	Discharge of material to river via storm drain	LWG Programmatic Work Plan (referenced as OERS 1-223)
Not yet identified	8-9	Unknown	9/23/2001	Approx. 10' x 3' rainbow-colored sheen observed on water; release of unknown quantity of oil to Willamette River from an unidentified source.	Direct discharge to river	ERNS Database, Incident No. 580665; National Response Center #580665; OERS 1-2410
Not yet identified	8-9	Unknown	8/4/2002	Sheen observed on water; release of unknown oil to Willamette River from an unknown source; booms and absorbents applied and material was contained.	Direct discharge to river	ERNS Database, Incident No. 618890; National Response Center #618890
Not yet identified	8-9	Unknown	1/30/2008	NRC Environmental received a call from Port of Portland Marine Security that a tank was observed floating in the water in north Portland Harbor. NRC responded and deployed 100 feet of containment boom around the tank. A four-gas meter and a photoionization detector were used monitor the air inside the tank. All readings were normal and visual/olfactory observations indicated that there was no odor or sheen. It was determined that there were no pollution concerns from the contents of the tank and that no further testing was required. No additional information was available.	Possible direct discharge to river	Port of Portland 104(e) Response for the Dredge Base
Not yet identified	8-9	Unknown	4/1992	A sheen was observed on the lagoon and the source was determined as an outfall between Berth 305 and 306.	Discharge of material to river via storm drain	Port of Portland 104(e) Response for SIUF/B311
NW Marine / Allstate Marine Cleaning / STANDLEY	8-9	Ship repair / marine vessel	6/29/1990	Chempro observed an oil slick on the river while conducting an in-house spill training at Swan Island Lagoon. The Coast Guard was notified and NW Marine and Allstate cleaned up the slick. Report indicates the source was the vessel STANDLEY.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
NW Marine / SEALAND HAWAII	8-9	Ship repair / marine vessel	9/14/1990	Sandblast material and oil were observed in the water at Berths 302 and 304. The oil sheen was observed emanating to Berth 305. The Coast Guard investigated and determined the oil was coming from under the sea curtain at the SEALAND HAWAII. NW Marine was notified and they cleaned up the oil.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
OBSERVER ISLAND	8-9	Marine vessel	2/17/1991	Grey paint spilled in water at Berth 303 from overspraying on OBSERVER ISLAND. Paint was approximately 60-70 yards long and 4-20' wide in places.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
OVERSEAS GALENA BAY	8-9	Transportation	10/19/2001	A report to the NRC stated that approximately 1 pint of lubricating oil was released from the vessel into the Willamette River from a leak in the lube oil cooler in the engine room.	Direct discharge to river	NRC Incident Reports
OVERSEAS OHIO	8-9	Marine vessel	1/25/1994	Brownish colored water observed coming from a drain hole near the deck of the ship OVERSEAS OHIO. Appeared to be leaving an unknown sediment.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
OVERSEAS OHIO	8-9	Marine vessel	1/31/1994	Black or brown substance observed emanating from the OVERSEAS OHIO at Berth 312.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Pacific Detroit Diesel	8-9	Manufacturing	8/28/1997	Approx. 100 yd x 200 yd black oil with gray sheen observed on Swan Island Lagoon; report indicates 25-40 gallons of unknown oil released to lagoon from outfall; source not known; cleanup contractor initiated cleanup.	Discharge of material to river via storm drain	ERNS Database, Incident No. 401531; National Response Center #401531; LWG Programmatic Work Plan (referenced as OERS 97-2198)
Pacific Marine Services / PAC Barge	8-9	Ship repair / marine vessel	10/15/1973	Release of debris and paint from sandblasting and painting. Release of debris and paint to Willamette River from sandblasting and painting work on PAC Barge 302-2 at Berth 309 (quantity not reported).	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Peninsula Truck Lines, Inc.	8-9	Transportation company	4/19991	OSFM incident report stated that an employee washing the bed of a 40-ft trailer spilled approximately 2 gallons of blue dye pigment into the storm sewer. The storm sewer is situated in the City of Portland's stormwater basin No. 18 which discharges to the Willamette River.	The intersection is situated in the City of Portland's OF 18 stormwater basin.	Oregon State Fire Marshal database
Polar Tankers	8-9	Marine vessel	5/14/2000	Release of crude oil from tanker POLAR SPIRIT while on dry dock; leaking drops of oil every few minutes; unknown quantity of oil released to Willamette River; ship boomed; vessel boomed; USCG, PDX Fire called by OERS. Report states ODFW Clean Rivers would also be called.	Direct discharge to river	ERNS Database, Incident No. 528965; National Response Center #528965; OERS 0-1055; Port of Portland 104(e) Response for SIUF/B311
Port of Portland	8-9	Government	7/9/1992	A hydraulic oil leak on a crane for Dry Dock 4 spilled onto the portside of the EXXON NORTH SLOPE which was on the dry dock. No release to the river was indicated.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Portland Truck and Diesel	8-9	Transportation	1/9/2003	A report to the NRC stated that approximately 160 gallons of oil were released from an oil/water separator to the surrounding soil due to equipment failure. The NRC database reported that it is not known whether the release reached the Willamette River.	Possible release to City's storm water conveyance system to either OF18 or 19.	NRC Incident Reports
Sea-Land Service, Inc./ Sea-Land Transport Co. and SEA-LAND NAVIGATOR, SEA-LAND HAWAII	8-9	Transportation company	12/1990	December 1990, day unknown, an unknown amount of foam was released into the river during the repair of a vessel, NAVIGATOR, owned by Sea-Land.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
SIERRA MADRE	8-9	Marine vessel	8/3/1990	Oil was observed in water at the stern of the vessel SIERRA MADRE. The oil dispersed before cleanup could occur.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
SIPCO / OVERSEAS CHICAGO	8-9	Ship repair / Marine Vessel	4/3/1992	Dirty water pumped by SIPCO from OVERSEAS CHICAGO into river.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
T/V ARCO SAG RIVER	8-9	Marine vessel	4/23/1986	In 1986, it was reported that 1 cup of crude oil was released to the river from a ballast pipeline. Discharge of pipeline/oil in line/discharging ballast at Dry Dock 4; report indicates 1 cup of Alaska North Slope crude oil released to Willamette River from T/V ARCO SAG RIVER; 10' x 50' sheen observed; boom placed and cleanup crew contacted.	Direct discharge to river	ERNS Database, Incident No. 46828; Port of Portland 104(e) Response for SIUF/B311
Trans Marine Navigation Company / M/V DANSUS	8-9	Marine vessel	6/25/2001	Release of marine gas from a faulty cap on a sounding pipe on M/V DANSUS while on dry dock; approx. 20 m x 4 m bluish-colored sheen observed; reports indicate 1 gallon or 5 liters of marine gas released to Willamette River; also states release was automotive gasoline; material contained by previously deployed boom.	Direct discharge to river	ERNS Database, Incident No. 570837; ERNS Database, Incident No. 570839; National Response Center #570837; OERS 1-1497; Port of Portland 104(e) Response for SIUF/B311
U.S. Army Corps of Engineers	8-9	Government	12/28/1989	Release of oil during transfer operations. Dredge ESSAYONS (U.S. Army Corps dredge), while transferring; approx. 10' sheen observed; report indicates 1 gallon motor oil released to Willamette River; sorbent material used to cleanup spill.	Direct discharge to river	ERNS Database, Incident No. 112496; Port of Portland 104(e) Response for SIUF/B311
U.S. Army Corps of Engineers	8-9	Government	9/16/1990	Yellow and white paint was observed in the river at Berth 302 near the Corps DREDGE ESSAYONS. Paint was contained within the boom. Cascade General was notified.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
U.S. Army Corps of Engineers	8-9	Government	9/20/1990	Hydraulic oil released from Dredge ESSAYONS due to equipment failure at Berth 303; approximate 6,000 sq. ft. sheen observed; report indicates 10 gallons hydraulic oil released to Willamette River; vessel was boomed in and sorbents used to cleanup spill.	Direct discharge to river	ERNS Database, Incident No. 40514; NRC Report #40514; Port of Portland 104(e) Response for SIUF/B311
U.S. Army Corps of Engineers	8-9	Government	9/23/1990	Hydraulic oil released from Dredge ESSAYONS due to equipment failure at Berth 303; approximately 6,000 sq. ft. sheen observed; report indicates 10 gallons hydraulic oil released to Willamette River; vessel was boomed in and sorbents used to cleanup spill.	Direct discharge to river	ERNS Database, Incident No. 40514; National Response Center #40514; Port of Portland 104(e) Response for SIUF/B311

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
U.S. Coast Guard	8-9	Government	12/9/1991	While pumping out sewage from the Coast Guard vessel POLAR STAR at Berth 312, a spill occurred (reported as DEQ Spill No. 91-163). When the POLAR STAR crew noticed sewage coming from the line, they immediately stopped pumping operations. It was estimated that less than 100 gallons of sewage was released in the Willamette River. No cleanup of the release was performed because of the inaccessibility of the location.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
U.S. Coast Guard	8-9	Government	4/5/1992	Oil sheen on the water caused by an engine problem in USCG RESOLUTE. A propeller hub leaked approximately 1/4 gallon of oil.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
U. S. Navy	8-9, 10-11	Defense agency	4/22/1946, 1/25/1987, 9/29/1989, 1/6/1991, 7/18/1991, 7/24/1991, 10/9/1991, 7/12/1994, 9/24/1994, 6/13/1995, 6/19/1995, 1/7/1996, 5/12/1997, 1/12/2001, 4/18/2002, 6/29/2003, 11/25/2003	A 1946 release of bilge oil into Swan Island Lagoon at Berthing Area B from pumping out bilges of an LST. Navy was owner of vessel USNS WILKES, which released approximately 1 gallon of lubricating oil in bilge into river in 1987. In 1989, Navy BARGE 60 was in repair at the PSY when a contractor released sandblast grit into the river. In January 1991, an oil sheen observed on water from the USNS SILAS BENT. Sheen approximately 20-30' x 80'. Material dissipated. A July 1991, two incidents were reported, including the release of approximately 1 gallon of hydraulic oil and 3 gallons of waste oil/lubricants from the USS WILLIAM H. STANDLEY into the river. In October 1991, two reports to the NRC stated that approximately 5 gallons of aviation fuel and 1 gallon of waste lubricating oil were released from USNS HASSAYAMPA and the USNS TITAN into the Willamette River, respectively. In 1994, a report stated that approximately 1 pint of jet fuel was released into the river when a contractor removed a cargo hose from the USNS GUADALUPE. A Sept. 1994 report stated that approximately 1 ounce of hydraulic oil was released into the river from the M/V SEALIFT ANTARCTIC. In June 1995, two NRC reports stated that approximately 6 gallons of waste oil was released from the USNS TIPPECANOE into the Willamette River during two separate incidents. An April 1996 report stated that approximately 25 gallons of unknown oil was released into the river when a stern line broke on the USS HIGGINS. A 1997 report to the NRC stated that approximately of 3 gallons of "bilge slops" or oily waste was released from USNS JOHN ERICSSON into the Willamette River when a tank truck in the process of shutting down lost material. In 2001, an oil sheen was observed in the dry dock following repairs to the Navy ship TIPPECANOE. In 2002, a sheen on the river was observed around the Navy vessel, USNS YUKON. In November 2003, 22-50 gallons of lubricating oil released during transfer to Navy vessel docked at Swan Island. Report indicates 2 gallons released to Willamette River. Absorbents and booms deployed and release was secured.	Direct discharge to river	PSY Suppl. PA, App. F (2006) NRC Incident Reports Port of Portland 104(e) Response for SIUF/B311
U.S. Navy & Pacific Coast Environmental, Inc.	8-9	Government	10/20/1991	Ballast tank on U.S. Navy vessel pumping over the side; operation was shut down and absorbent pads and a boat were deployed. Report indicates 50 gallons of diesel fuel released to Swan Island Lagoon.	Direct discharge to river	ERNS Database, Incident No. 92949; National Response Center #92949; Port of Portland 104(e) Response for SIUF/B311
United States	8-9	Government	6/11/1946	Fire at Deperming Station; letter indicates "that the standing order forbidding pumping of oily bilges is being disobeyed."	Possible direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
United States / Kaiser Company, Inc.	8-9	Shipbuilding	1/16/1943	Deck and sides of the SS SCHENECTADY, fractured just aft of the bridge superstructure while tied up at outfitting pier.	Possible direct discharge to river	Port of Portland 104(e) Response for SIUF/B311; www.fingerpublishing.com
VENETIA	8-9	Marine vessel	6/2/2003	8' X 8' sheen observed outside boom of UNIVERSE EXPLORER - believed to be from the VENETIA, a neighboring ship.	Direct discharge to river	LWG Programmatic Work Plan (referenced as OERS 3-1115)
Werner Enterprises	8-9	Transportation	1/13/2000, 10/19/2001	In January 2000, a spill from tractor trailer of 60 gallons occurred at the Werner facility. The spill discharged to a storm sewer and approximately 30 gallons reached the river. In October 2001, a report to the NRC stated that approximately 30 gallons of fuel oil was released when a crossover line on a tractor trailer saddle tank ruptured. The oil was released to the roadway then flowed into a storm drain. The roadway is situated in the City of Portland's storm water Outfall Basin 18.	Direct discharge to river	NRC Incident Report #516905; NRC Incident Reports
West State Inc.	8-9	Ship repair	4/28/1991	Diesel spill around starboard side of Dry Dock 3; looked to be emanating from the sea curtain. West State Inc. notified and worked to clean up.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
West State Inc.	8-9	Ship repair	8/11/1992	Sewage liquids spilled from a vessel (name illegible).	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
West State Inc. & Chevron Corporation	8-9	Ship repair / marine vessel	5/4/1991	Release of sandblast grit and paint chips into river from West State Inc. working on CHEVRON RANGER ARIZONA.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
West State Inc. & Chevron Corporation	8-9	Ship repair / marine vessel	1/29/1992	WSI was observed washing out ballast tanks of CHEVRON CALIFORNIA and letting the water flow over the inboard side of the ship.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
West State Inc. & Chevron Corporation	8-9	Ship repair / marine vessel	2/12/1992	Sandblast material was observed being pumped into the river from the vessel CHEVRON CALIFORNIA.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
West State Inc. / SIPCO / SEALAND NAVIGATOR	8-9	Ship repair / marine vessel	2/9/1991	Release from shoveling sandblast sand into river while West State Inc. and SIPCO working on the SEALAND NAVIGATOR.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
West State, Inc. / MARYLAND	8-9	Ship repair / marine vessel	11/14/1987	Alleged oil slick on river from drydock which was being flooded to lower the tanker MARYLAND (formerly STUDEVANT) into the water.	Possible direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
West State, Inc. / OVERSEAS PHILADELPHIA	8-9	Ship repair / marine vessel	5/17/1992	Dust was discharged from vessel OVERSEAS PHILADELPHIA at Berth 304 directly to the lagoon instead of a bag house. Reportedly due to mechanical failure.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
West State, Inc. / SIPCO / SEALAND TRADER	8-9	Ship repair / marine vessel	1/26/1991	Release of sandblast grit into air and river from West State Inc. and SIPCO working on SEALAND TRADER.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
Western Towboat Co.	8-9	Tugboat operator	3/9/2004	During an internal transfer, vessel Ocean Mariner discharged 4 gallons of diesel from an overhead vent. Diesel ran out scupper and discharged to river.	Direct discharge to river	NRC Incident Report #715543
WISCO / SS BARBARA	8-9	Ship repair / marine vessel	6/20/1957	Workmen for WISCO were removing belly plugs from SS BARBARA to drain water ballast from tanks and by mistake took out an oil tank plug. A considerable amount of oil was released to the Willamette River and WISCO was working all night to clean it up.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
WSI / CURY	8-9	Ship repair / marine vessel	3/27/1992	Heavy black oil was observed at the stern of the vessel CURY. The Coast Guard was notified.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
WSI / DELAWARE TRADER	8-9	Ship repair / marine vessel	5/2/1994	WSI working on the DELAWARE TRADER was observed discharging large quantities of muddy water (possibly sandblast grit) onto the Pier at Berths 302 and 303.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
WSI / Lockwood Industries	8-9	Ship repair / marine vessel	1/26/1992	Two Lockwood Industries tankers (#6B-1 and #101) were observed with dripping oil from valves.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
WSI / OVERSEAS OHIO	8-9	Ship repair / marine vessel	1/17/1994	An oily substance and blob of an unknown black substance (1-, 2-, and 3-inch diameters) were observed emanating from the OVERSEAS OHIO at Dry Dock 4. WSI notified the Coast Guard.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
WSI / OVERSEAS OHIO	8-9	Ship repair / marine vessel	1/27/1994	Two hoses were observed from OVERSEAS OHIO dumping a mixture of sand and water into the river.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
WSI / OVERSEAS OHIO	8-9	Ship repair / marine vessel	2/4/1994	Dirty water was overflowing from tank into the river.	Direct discharge to river	Port of Portland 104(e) Response for SIUF/B311
American Transport	9-10	Transportation company	8/1991	American Transport Inc. (now American Energy, Inc.) has been reported as a responsible party for a number of spills in the City of Portland, some of which have entered a waterway. One incident within the Study Area reported in the OSFM database involved 4,400-gallon tanker that broke off its mount, spilling diesel fuel. OSFM reported that 500 gallons were released and material entered a waterway. The location of the spill is situated in the City of Portland's Stormwater Basin No. 19A, which discharges to the Willamette River.	The intersection is situated in the City of Portland's OF 19A stormwater basin.	Oregon State Fire Marshal database NRC Incident Reports, NRC Incident Reports #303504 & 777997
CPS Express	9-10	Transportation company	One-time event occurring in March 1995	OSFM incident report stated that a tractor trailer rig leaked approximately 10-15 gallons of an unknown chemical into the public street. OSFM reported that approximately 10 gallons were released into a storm sewer. The storm sewer is situated in the City of Portland's Stormwater Basin No. 17, which discharges to the Willamette River.	Stormwater from the area flows into the Lower Balch Creek Basin which discharges to City of Portland Outfall 17 thence into the Willamette River.	Oregon State Fire Marshal database
Crowley Marine Services		Marine transportation company	10/5/1990, 2/9/1993, 4/10/1997, 5/2/1997	A 1990 report to the NRC stated that a 10-gallon release occurred with an unknown amount of diesel oil flowing into the Willamette River when a tank was overfilled. A 1993 report to the NRC stated that approximately 2 gallons of ballast water were released into the river. An April 1997 report to the NRC stated that approximately 1 pint of hydraulic oil was released from the tug ADVENTURER into the Willamette River due to a seal leak on a propeller shaft. A May 1997 report to the NRC stated that approximately 0.5 cup of diesel oil was released from the tug CAVALIER into the Willamette River due to a seal failure.	Direct discharge to river	NRC Incident Reports
General Electric Company	9-10	Electrical apparatus decommissioning facility	2/4/1994	A report to the NRC stated that approximately 1 pint of PCB-contaminated oil was released when a capacitor motor leaked onto concrete due to an equipment failure. The report confirmed that there was a release to the water, although a "zero" was the amount reaching the water in the report.	Discharge to river via storm sewer	NRC Incident Reports
LASCO Shipping	9-10	Transportation	10/9/1998	A report to the NRC stated that approximately 1 liter of hydraulic oil was released from the M/V PACKING into the river due to a broken hydraulic hose on a hatch cover.	Direct discharge to river	NRC Incident Reports

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Michael Wakefield dba Three Hats Farm	9-10	Transportation company	One-time event occurring in May 2001	OSFM incident report stated that a semi-tractor trailer jack-knifed during an auto accident. The seam on the trailer tank ruptured, spilling 30-40 gallons of diesel fuel onto the roadway in the vicinity of two storm drains. OSFM estimated that 20-30 gallons discharged into the storm drains. The intersection is situated in the City of Portland's Stormwater Basin No. 15, which discharges to the Willamette River.	Stormwater from the area flows into the Nicolai Basin which discharges to City of Portland Outfall 15 thence into the Willamette River.	Oregon State Fire Marshal database
Portland Bagel	9-10	Bakery	12/1995	OSFM incident report stated that a truck was leaking diesel fuel in a nearby parking lot (3571 NW Yeon). OSFM reported that 2-3 gallons of diesel fuel spilled and may have flowed into a storm sewer sump. The storm sewer is situated in the City of Portland's Stormwater Basin No. 17, which discharges to the Willamette River.	Stormwater from the area flows into the Lower Balch Creek Basin which discharges to City of Portland Outfall 17 thence into the Willamette River.	Oregon State Fire Marshal database
Pro Truck Lines	9-10	Transportation	5/25/1995	A report to the NRC stated that approximately 80 gallons of diesel oil was released to the ground from ruptured fuel line on a truck. An unknown amount of oil was released to the Willamette River via public conveyance system.	Discharge of material to river via storm drain	NRC Incident Reports
Stevedoring Services Inc.	9-10	Terminal stevedoring operations for loading and unloading container cargo, bulk and breakbulk for products	1/15/1995	A report to the NRC stated that an unknown amount of paint thinner was released into the Willamette River when a paint pallet spilled from the M/V PAC PRINCE's crane.	Direct discharge to river	NRC Incident Reports
Truax Oil, Inc.	9-10	Transportation company	12/19/1990	As reported to the NRC, a tanker truck driver lost control of the vehicle. The accident ruptured the tanker, releasing at least 50 gallons of diesel fuel. An unknown amount discharged to the storm drain and then entered the Willamette River. The accident occurred within the City of Portland's Stormwater Basin No. 17, which discharges to the Willamette River.	Stormwater from the area flows into the Lower Balch Creek Basin which discharges to City of Portland Outfall 17 thence into the Willamette River.	National Response Center
ALLUNGA	10	Marine vessel	4/14/1985	A 100 ft. by 300 ft. sheen was observed traversing the lengths of Berths 205 and 206. The Coast Guard determined the source to be soot from the vessel ALLUNGA which was berthed at the WISCO facility for overhaul work.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
City of Portland	10	Government	1/5/2005	January 5 through 6, 2005 – A sheen was observed in the City of Portland’s Fireboat Cove adjacent to Terminal 2 during dredging activities associated with a utility locate. Port staff videotaped sediments being sucked up, sprayed into the air and being deposited back into the slip.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
DIMOSTA	10	Marine vessel	5/24/1989	A spill occurred when three barrels of sulfuric acid fell from the vessel DIMOSTA onto the dock near the bullrail and ruptured spilling a small amount of liquid. The liquid was diluted and partially washed away with rainwater into river. The spill was estimated at 165 liters.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
GOLDEN ALPHA	10	Marine vessel	6/28/1992	Approximately one barrel of oil was released from the vessel GOLDEN ALPHA at Berth 206. The spill caused a sheen on the river that extended about 200 feet around the ship's stern.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
MICRONESIAN NATIONS	10	Marine vessel	1/16/1999	Prior to departing Berth 206, the fuel/oil was discharged from the stern of the vessel MICRONESIAN NATIONS. The diameter of the spill was approximately 150 ft. by 200 ft. under the dock. The Coast Guard was notified. No additional information was available.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
Not yet identified	10	Unknown	11/4/1981	Oil was observed on the water underneath Berths 201 to 203. The Coast Guard was notified and they indicated it was a sheen of diesel originating from “down river.”	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
Not yet identified	10	Unknown	5/16/1983	An oil and red paint mixture was observed traversing the length of Berth 205. The oil/paint slick was approximately 1,800 feet long and 10 to 12 feet wide. Although the source could not be determined, it appeared to be originating from upstream and extended a short distance beyond the WISCO fence.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
Not yet identified	10	Unknown	7/19/1989	A light sheen was observed on the river in the vicinity of Berth 206.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
Not yet identified	10	Unknown	8/20/2004	A personal watercraft struck piling #221 at Berth 204 and sank. Gasoline was noted leaking from the sunken boat. Fred Devine Diving and Salvage was contacted to recover the vessel.	Direct discharge to river	Port of Portland 104e Response for Terminal 2
OVERSEAS BOSTON	10	Marine vessel	12/20/1993	A thick foamy substance was observed in the water in the vicinity of Berth 206. The source was determined to be a substance originating from the OVERSEAS BOSTON, which was berthed at the Sulzer-Bingham facility.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
SEA VENTURE	10	Marine vessel	10/14/1991	Approximately 25 to 30 gallons of diesel was released from the vessel SEA VENTURE at Berth 203 and caused a sheen on the river. Crowley contacted the Coast Guard and Riedel International was called, the area was boomed off, and absorbents were used to control the spill. Approximately 90 percent of the spill was cleaned up within an hour of its release.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Union Pacific Railroad Company	10	Railroad company	10/30/1994	An oil slick was identified off Terminal 2 in the vicinity of Berth 206. The Coast Guard was contacted and they indicated that the slick was residual oil from a Union Pacific Railroad spill that occurred the previous week. The Coast Guard decided the sheen would break up and did not require clean-up.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
Western Transportation Company	10	Transportation company	7/10/1989	A sheen was observed in the water off of Berths 203 and 204 and appeared to be originating from Western Transportation upstream.	Direct discharge to river	Port of Portland 104(e) Response for Terminal 2
Arrow Transportation Company	10-11	Transportation company	10/10/1990	Material spilled from a hose when Arrow Transportation Company was loading a ship from a truck, approximately 15 gallons of lubricating oil released, approximately 5 gallons reached Willamette River. Spill was cleaned up with sorbent materials.	Direct discharge to river	Port of Portland 104(e) Response for T1 North
M/V MARIA CARLA D'AMICO	10-11	Marine vessel	11/2/1971	Oil slick associated with vessel M/V MARIA CARLA D'AMICO observed adjacent to Terminal 1; estimated 90 gallons released to Willamette River.	Direct discharge to river	Port of Portland 104(e) Response for T1 South; Port of Portland 104(e) Response for T1 North
Not yet identified	10-11	Unknown	6/24/1997	Release of unspecified oil reported based on "unknown sheen sighting"; sheen size approximately 100 ft X 100 ft; some rainbow color; caller was aboard SS BEAVER STATE.	Direct discharge to river	Port of Portland 104(e) Response for T1 North; Port of Portland 104(e) Response for T1 South
Shaver Transportation Company	10-11	Transportation company	11/8/1971	Estimated 3 barrels of Bunker C released to Willamette River by Shaver Transportation fuel barge when a line to the vessel ALBIA broke (reported by Shaver).	Direct discharge to river	Port of Portland 104(e) Response for T1 North
SS EL CENTRO AMERICANO	10-11	Marine vessel	2/13/1982	Oil spill observed on the deck of the vessel SS EL CENTRO AMERICANO at Berth 103 (quantity not reported); no additional information available.	Direct discharge to river	Port of Portland 104(e) Response for T1 North
SS LOCH LOYAL	10-11	Marine vessel	12/11/1971	Oil slick associated with SS LOCH LOYAL observed at Berth 8 (quantity not reported).	Direct discharge to river	Port of Portland 104(e) Response for T1 North
SS MAAS LLOYD	10-11	Marine vessel	2/8/1971	Release of oil from Berth 6 to Willamette River, cleaned up by Shaver (quantity not reported).	Direct discharge to river	Port of Portland 104(e) Response for T1 North
SS MARYLAND or TUG NAVIGATOR	10-11	Marine vessel	5/31/1985	Oil slick observed at Berth 101; estimated at 100 ft in length; source reported as either vessel SS MARYLAND or the tug NAVIGATOR (quantity not reported).	Direct discharge to river	Port of Portland 104(e) Response for T1 North
Zidell Explorations	10-11	Ship scrapping	1968	Oil slick from release at upstream Zidell facility observed at Terminal 1.	Direct discharge to river	Port of Portland 104(e) Response for T1 South; Port of Portland 104(e) Response for T1 North
MARAD / GREEN MOUNTAIN STATE	11	Marine vessel	9/11/1996	An overspray occurred while a contractor was painting the Marad vessel GREEN MOUNTAIN STATE. Marad accepted responsibility for the overspray and contacted the affected tenant, Thermo Pressed Laminates.	Direct discharge to river	Port of Portland 104(e) Response for T1 South
NAVIGATOR	11	Marine vessel	5/30/1985	The tug NAVIGATOR had a wire run through the propeller shaft seal causing it to spew oil when it was departing from Berth 104. No volume was indicated, but the release was reported to the Coast Guard and cleaned up by Crowley Maritime's environmental team on the day of the release.	Direct discharge to river	Port of Portland 104(e) Response for T1 South
Not yet identified	11	Unknown	3/9/1981	A 10 by 1,000 ft spill was observed at Berth 104; no known cause.	Direct discharge to river	Port of Portland 104(e) Response for T1 South
Not yet identified	11	Unknown	9/25/1981	An oil slick was observed emanating from the Fremont Bridge area downstream to Terminal 1 Berths 101 to 106; source reported as upriver (quantity not specified).	Direct discharge to river	Port of Portland 104(e) Response for T1 South; Port of Portland 104(e) Response for T1 North
Not yet identified	11	Unknown	10/19/1981	A spill was reported extending from Berth 105 down to Berth 101, although no ships were in the vicinity, only a barge; 20-30 feet wide.	Direct discharge to river	Port of Portland 104(e) Response for T1 South
Not yet identified	11	Unknown	5/24/1974	A discharge of lube oil occurred from the maintenance shop in the Gearlocker because of an equipment failure and caused an oil sump to overflow into the Willamette River. A 5-foot by 15-foot oil slick was observed and it was estimated that less than one gallon of oil per day entered the river.	Direct discharge to river	Port of Portland 104(e) Response for T1 South
U.S. Maritime Administration	11	Government	Unknown	No Date. While conducting painting activities on the MARAD vessel GREEN MOUNTAIN STATE laid up at Berth 104, MARAD's contractor accidentally oversprayed into an area leased by Thermo Pressed Laminates.	Direct discharge to river	Port of Portland 104(e) Response for T1 South
Unknown Vessel	11	Marine vessel	5/21/1991	An oily sheen was observed downriver from an old paddle-wheel docked at Berth 105.	Direct discharge to river	Port of Portland 104(e) Response for T1 South
Olympic Tug and Barge	11.4	Transportation	11/24/2001	Sheen observed comping from vicinity of the Irving dock.	In river	NRC 586800
M/V Jude Breeze	11-12	Transportation	3/29/2008	A NRC incident report stated that there was a contractor working on the ship that spilled 0.5 gallons of oil into the river while disconnecting a hose.	Direct discharge to river	NRC Incident Reports

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Rexel/Taylor Electric	12-13	Warehouse	5/18/2006	A 120 gallon spill/unrecoverable sheen on river caused by firefighting efforts at facility warehouse. Spill traced to three utility pole transformers that were damaged in the fire. Oils were released to the ground and water from firefighting efforts washed oil down storm drain. Unknown whether the transformers contained PCB oil.	Discharge of material to river via storm drain	NRC Incident Report #797606
Tidewater Barge Lines	12.1	Marine transportation company	8/28/1994	Diesel released under Steel Bridge from Barge #36	Direct discharge to river	from Second Amended complaint
DREDGE OREGON	Swan Island	Dredge vessel	6/7/2005	40 gallons of hydraulic oil released to river while transferring. Fuel came out of vent during fuel transfer, spilled on deck and between 5-10 gallons entered the river. Absorbents were used to clean up spill.	Direct discharge to river	NRC 761272/ OERS 05-1253
LIBERTY SEA	Terminal 5	Marine vessel	12/8/2000	Sheen of unknown oil observed along side LIBERTY SEA vessel at Columbia Grain Elevators, Terminal 5.	In river	NRC 550405/ OERS 00-2910
JOHNNY PETERSON	Terminal 5	Marine vessel	8/5/2003	Towing vessel pushing barge SANDERLING ran into POP Ship dock at T5 behind the Alcatel Facility, releasing 750 gallons.	Direct discharge to river	OERS 03-1681
LIBERTY SEA	Terminal 5	Marine vessel	12/8/2000	Sheen of unknown oil observed along side LIBERTY SEA vessel at Columbia Grain Elevators, Terminal 5.	In river	NRC 550405/ OERS 00-2910
JOHNNY PETERSON	Terminal 5	Marine vessel	8/5/2003	Towing vessel pushing barge SANDERLING ran into POP Ship dock at T5 behind the Alcatel Facility, releasing 750 gallons.	Direct discharge to river	OERS 03-1681
National Oceanic and Atmospheric Administration	Unknown	Research vessel	2/5/2001	A discharge of approximately 1 cup of No. 2 diesel occurred from the R/V MCARTHUR to Willamette River.	Direct discharge to river	USCG Pollution Report
Portland General Electric Company	Unknown	Electric utility company	10/25/2004	In October 2004, approximately 30 gallons spilled from a pole transformer at 3001 SE Morrison containing fluid with 31 ppm PCB based on 9/30/1986 sampling. Oil initially discharged to ground and subsequently to river via storm drains.	Discharge of material to river via storm drain	NRC Report #739571
Portland General Electric Company	Unknown	Electric utility company	11/30/1999	In November 1999, the NRC reported that approximately 3 gallons of hydraulic oil was released into the water, from a ruptured truck reservoir line. The spill reached a nearby storm drain and was released into the Willamette River.	Discharge of material to river via storm drain	NRC Report #507354
Portland General Electric Company	Unknown	Power barge Pole transformer	4/4/2008	Hydraulic lift broke on wiggle tail digging truck and hydraulic oil was released into nearby storm drain at 20717 NW Vaughn St.	Storm drain	NRC 867007
Wilson Oil	Unknown	Transportation company	12/1987	OSFM incident report stated that a tanker truck overturned leaking approximately 3,000 gallons of gasoline on the roadway. The OSFM report does not provide enough information concerning the spill, but it is assumed that some volume of gasoline discharged into storm sewers on St. Helens Road which then flowed to the Willamette River. More research is necessary to determine where the tanker truck picked up the load and the exact location of the accident.	Stormwater system	Oregon State Fire Marshal database
Tosco Company	Unknown	Tug	11/2/1999	Fuel tank vent on tug HOWARD OLSON "burped" during refueling. Approximately 1/2 gallon No. 2-D fuel oil spilled during refueling.	Direct discharge to river	NRC 504542/ OERS 99-2526
Sause Brothers	Unknown	Transportation	7/27/2010	Unknown hydrocarbon sheen observed at Sause Dock.	In river	NRC 948990
Sause Brothers	Unknown	Transportation	3/29/2008	Diesel fuel release from tug boat due to tank overflow. Cracked fuel tank spilled diesel fuel into bilge and bilge automatically turned on releasing 55 gallons into river. Location described as 3710 NW Front Ave.	Direct discharge to river	NRC 866359/ OERS 08-0788
Sause Brothers	Unknown	Transportation	12/28/2007	Sheen observed in river. Source is old underground saturation that seeps to surface occasionally. The 10 ft x 15 ft sheen was contained with absorbents. Weathered oil may have been stirred up from bottom or discharged from groundwater under bank. Unknown origin. Location described as 3710 NW Front Ave.	Direct discharge to river	NRC 858324/ OERS 07-2994
Yong/Trans-Marine Navigation	Unknown	Transportation company	2/12/2000	M/V YONG AN released No. 2 bunker oil when pumping bilges. Valve was stuck open. Location described as Columbia Grain elevator at terminal #5 south of Broadway.	Direct discharge to river	NRC 519661/ OERS 00-0354
M/V COLORADO VOYAGER	Unknown	Marine vessel	12/30/09	A NCR incident report noting the spill of unknown oil from a scupper during the changing of a pad in the scupper.	Direct discharge to river	NRC Incident Reports
Tugboat PORTLAND	Unknown	Tugboat	5/31/1991	Diesel oil release of unknown quantity	Direct discharge to river	NRC 73950
M/V CABLE VENTURE & T/B BMC4	Unknown	Unknown	6/18/1993	Material observed in water during bunkering	Direct discharge to river	NRC 181179
Barwil Agencies	Unknown	Marine vessel	12/19/1993	M/V KIMISIS leaking lubricating oil from discharge pipe. Sheen size 1 meter in diameter	Direct discharge to river	NRC 213241
Barwil Agencies	Unknown	Marine vessel	10/29/2001	Unknown oil released from the M/V ROVER due to rain washing material off deck at 800 N River St.	Direct discharge to river	NRC 584611
M/V COVE ENDEAVOR	Unknown	Marine vessel	1/14/1994	M/V COVE ENDEAVOR leaking bunker oil due to unknown cause. Sheen observed 1000 ft x 100 ft. Location description listed as Schnitzer International Terminal	Direct discharge to river	NRC 216741 and 216707

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
West Coast Shipping Company	Unknown	Unknown	7/6/1995	Loose rivet on starboard bunker tank sheet of T/S CORNUCOPIA. No. 6 fuel oil release. Location described as Union Chemical Dock.	Direct discharge to river	NRC 298604
Anglo Eastern Ship Management	Unknown	Unknown	2/1/1997	Crew of M/V HANDY GUNNER was washing out holds and inadvertently washed oil off deck into water. Location described as Lone Star Cement Terminal.	Direct discharge to river	NRC 375991
Hickey Marine	Unknown	Unknown	2/8/1997	Hydraulic oil released due to steering system hydraulic hose rupture on tug MAVERICK. Location described as Columbia Grain Pier Facility.	Direct discharge to river	NRC 375991
M/V PAN NOBLE	Unknown	Unknown	6/23/1997	Sheen observed coming from M/V PAN NOBLE	Direct discharge to river	NRC 392440
JA RAINBOW	Unknown	Marine vessel	1/28/1998	Vessel JA Rainbow had hydraulic leak. A line burst on rope tightener spilling hydraulic oil on the deck (600 liters, 160 gallons total, 15-20 gallons in the river)	Direct discharge to river	NRC 421623/OERS 98-0223
Barge GOLIATH	Unknown	Barge	3/28/1998	Hydraulic line on Barge GOLIATH broken. Area boomed, 40-45 gallons, mostly contained. Location described as United Grain below BNRE bridge.	Direct discharge to river	OERS # 98-0727
M/V EVRIMEDON	Unknown	Marine vessel	5/4/1998	Leak of unknown oil in ballaster. Location described as Columbia Grain Docks near St. Johns.	Direct discharge to river	NRC 435312
Unocal Agricultural Products	Unknown	Unknown	7/24/1998	Dock electric line puller shaft seal/shaft over heated and expanded allowing an unknown oil to spill.	Direct discharge to river	NRC 447409
Vessel JUNEAU	Unknown	Marine vessel	9/30/1998	3 ft x 70 ft sheen of unprocessed/semi-processed oil observed near vessel. Location described as Schnitzer Steel dock.	Direct discharge to river	OERS # 98-2319
Maritime Fire and Safety	Unknown	Unknown	9/12/2000	A grain vessel leaked an unknown oil into river at Columbia Grain Dock.	In river	NRC 541921
Unocal Inc.	Unknown	Barge	12/4/1995	Release of diesel oil from fuel line on barge.	Direct discharge to river	NRC 316021
Maritime Fire and Safety	Unknown	Unknown	9/12/2000	A grain vessel leaked an unknown oil into river at Columbia Grain Dock.	In river	NRC 541921
NAN CHANG HAI	Unknown	Marine vessel	4/18/2004	Diesel oil sheen observed on river resulting from fueling operation of an excavator located on vessel. Located near 14003 N Rivergate Blvd.	Mobile	NRC 719188
City of Portland OF-18	Unknown	Government	7/28/2006	Unknown sheen originating from outfall under facility that is owned by city at 4350 NW Front Ave. It was formerly OF-18.	In river	NRC 805865
Lindblad Expedition	Unknown	Unknown	10/27/2006	Half a quart of diesel fuel discharged into river from starboard aft storage tank due to unknown causes.	Direct discharge to river	NRC 816238
West Coast Marine Cleaning	Unknown	Cleanup contractor	3/29/2008	Spill reported at 800 N River St/CLD Irving grain elevator. Oil spilled while disconnecting a hose on a ship. Released 1 quart of bilge water due to hose cap coming off end of transfer hose after completing the transfer.	In river	NRC 866396 and 966397
Georgia Pacific Consumer Products NW	Unknown	Unknown	10/1/2008	Lubricating oil release from material handling system's from leaking gear boxes at two locations. This release was discovered during formal inspection. Release went to river and caused sheen. Location described as 13333 N Rivergate Blvd.	Direct discharge to river	NRC 885897
Georgia Pacific Consumer Products NW	Unknown	Unknown	11/20/2008	Motorized sweeper developed oil leak at pressure gauge. Operator did not notice leak and drove across dock. When stopped a puddle developed which seeped between floor boards of dock and some amount was released to river. Estimated less than 2 tablespoons released. Small sheen developed. Location described as 13333 N Rivergate Blvd.	Direct discharge to river	NRC 890593
Georgia Pacific Consumer Products NW	Unknown	Unknown	6/2/2009	Unknown sheen observed at facility, 13333 N Rivergate Blvd.	In river	NRC 907372
Olympic Tug & Barge	Unknown	Marine transportation company	11/3/1998	PACIFIC FALCON tug boat released approximately 1 gallon of No. 2-D fuel oil. Overfilled during refueling.	Direct discharge to river	NRC 462526/ OERS 98-2637
Prodicta	Unknown	Barge	11/16/1999	Rainwater washed residual motor oil from deck of the barge HEDGES into water. Location described as 14003 N Rivergate Blvd.	Direct discharge to river	NRC 505967
Chevron Shipping Company	Unknown	Unknown	1/12/2010	Spill of unknown oil from a scupper on a vessel during changing of pad in the scupper.	In river	NRC 928374
Aldridge Motor Sports	Unknown	Unknown	4/13/2005	Owner of company dumped oil and other materials (solvents, gasoline, ethylene glycol) down storm drain at facility to save money.	Storm drain	NRC 755648
Trimet	Unknown	Unknown	10/22/2007	City crew flushing hydrant nearby which flushed some oil down storm drain at N Willams and N Russell.	Storm drain	NRC 852324
British Petroleum	Unknown	Unknown	6/5/2008	Due to remediation system being down, contaminated water entered unknown waterway. System located at 9930 NW St Helens Rd.	Fixed	NRC 873225
Western Star Truck Plant	Unknown	Unknown	12/19/2008	Release of diesel fuel from distribution system due to equipment failure. Release was to the ground and into storm drain near 6936 N Fathom St.	Storm drain	NRC 893015
Reinhard Petroleum	Unknown	Unknown	2/20/2009	Truck leaked diesel due to unknown causes. Material reached storm drain at 4155 NW Yeon St.	Storm drain	NRC 898110
Columbia Steel Casting Company	Unknown	Unknown	6/3/2009	Small amount of lube oil in air compressor leaked into cooling water system into storm drain at 10425 N Bloss Ave.	Storm drain	NRC 907495

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Knappton Corporation	Unknown	Unknown	1/12/1998	Oil/water separator disconnected and caused a small sheen on board barge. 1-5 gallons released. Location described as 9030 NW St Helens Rd.	Vessel-Barge	OERS # 98-0067
Knappton Corporation	Unknown	Unknown	1/12/1998	Bilge pump problem. ~25 gallons released to river. Pump shut off after 15-20 sec. Product contained in slip area, boom and pads applied. Location described as 9030 NW St Helens Rd.	Vessel-Barge-River	OERS # 98-0075
Knappton Corporation	Unknown	Unknown	7/8/2002	Tug LEWISTON lost 5 gallons while fueling at 9030 NW St Helens Rd. Tug was pre-boomed.	River	OERS # 02-0911
Fesco Agents	Unknown	Unknown	2/22/2000	10 gallon loading equipment leaking inside freight container - improperly stored. Leaked oily substance (hydraulic fluid?). Occurred at POP Berth #603 (Rivergate Area)	Vessel-Cargo	OERS # 00-0431
Cerrahgil Group of Companies	Unknown	Unknown	3/5/2001	Fuel spill (1 gal) on board vessel. Crew used degrease/dispersant to clean spill. Material escaped over board through breach of scuppers (not closed correctly). Occurred at Portland International Terminal.	River	OERS # 01-587
Ership International	Unknown	Unknown	4/27/2004	NON issued for ballast water violation NON-BW-04-001	Direct discharge to river	OERS # 04-4401
Tidewater Barge Lines	Unknown	Marine transportation company	11/18/1996	Released 75 gallons of unknown material due to ruptured hydraulic steering line on Tidewater tug MAVERICK	Direct discharge to river	OERS # 96-3169
Tidewater Barge Lines	Unknown	Marine transportation company	4/8/1991	Seam failed on Barge TW 704 and released gasoline to river	Direct discharge to river	67116
Tidewater Barge Lines	Unknown	Marine transportation company	5/2/1985	15 gallons of diesel fuel released into river from an overflow during fueling of Tidewater Barge Line tug boat INVADER	Direct discharge to river	NRC Incident Report No. 6636
Tidewater Barge Lines	Unknown	Marine transportation company	7/17/1984	150 gallons of diesel fuel was released into river from hole in tank of Tidewater Barge #36.	Direct discharge to river	NRC Database Incident Report No. 3993
Unknown outfall	Unknown	Unknown	5/17/1996	Unknown oil observed in unknown outfall at 9030 NW St Helens Rd.	Storm drain/outfall	NRC 940087
Unknown outfall	Unknown	Unknown	10/27/1998	Outfall dumping milky color substances into river next to Albina RR yard at 2600 N River St	Outfall to river	NRC 461582
Unknown outfall	Unknown	Unknown	8/6/2007	Sheen on river originating from outfall pipe. Sheen observed at 6211 N Ensign St.	In river	NRC 844597
Unknown	Unknown	Unknown	7/17/1992	Unknown rainbow sheen observed 0.5 miles x 40 ft. Location given as 9030 St. Helens Rd.	In river	NRC 127305
Unknown	Unknown	Unknown	11/18/1992	Unknown rainbow sheen observed 300 ft x 50-80 ft. Location given as 9030 St. Helens Rd.	In river	NRC 145369
Unknown	Unknown	Unknown	12/15/1992	Unknown sheen observed between Union and Chevron oil docks. Blue-gray sheen 300 yds x 50 ft.	In river	NRC 149247
Unknown	Unknown	Unknown	1/16/1993	Unknown sheen observed 100 ft x 15 ft. Location given as 9030 St. Helens Rd.	In river	NRC 153669
Unknown	5	Unknown	8/12/1993	Unknown rainbow sheen observed 150 ft x 200 ft.	In river	NRC 192126
Unknown	Unknown	Unknown	7/27/1994	Unknown rainbow sheen observed 5 ft x 5 ft. Location described as Swan Island Navy and Marine Corps Reserve Center	In river	NRC 253123
Unknown	Unknown	Unknown	10/9/1994	Unknown sheen observed near M/V BLED. Sheen 20 ft x 75 ft. Location described as Columbia Aluminum, 2600 N River St, Swan Island.	In river	NRC 264545
Unknown	Unknown	Unknown	12/27/1994	Unknown pink sheen of unknown material observed 50 yds in size. Location described as 9420 NW St Helens Rd.	In river	NRC 274414
Unknown	Unknown	Unknown	12/29/1994	Unknown rainbow sheen of unknown oil observed 3 ft x 15 ft. Location described as 11400 NW St Helens Rd.	In river	NRC 274645
Unknown	Unknown	Unknown	1/12/1995	Unknown blue sheen of unknown oil observed 50 ft x 30 ft. Location described as 9030 NW St Helens Rd.	In river	NRC 276118
Unknown	Unknown	Unknown	2/15/1995	Unknown silvery to rainbow sheen observed, 25 ft x 50 ft. Location described as International Terminals Slip.	In river	NRC 279930
Unknown	Unknown	Unknown	10/30/1995	Unknown rainbow sheen observed 100 ft x 100 ft. Location described as 12005 N. Burgard Rd, International Terminals.	In river	NRC 312450
Unknown	Unknown	Unknown	12/18/1995	Unknown rainbow sheen observed 4 ft x 70 ft. Location described as 9930 NW St Helens Rd.	In river	NRC 317544
Unknown	Unknown	Unknown	1/10/1996	Unknown rainbow sheen observed 1000-2000 sq ft. Location described as 12005 N Burgard Rd.	In river	NRC 319630
Unknown	Unknown	Unknown	2/9/1996	Unknown sheen of unknown oil observed 300 sq yd. Location described as 8010 NW St Helens Rd.	In river	NRC 325102
Unknown	Unknown	Unknown	6/21/1996	Unknown rainbow sheen of unknown oil observed 200 ft x 50 ft. Location described as 5528 NW Doane Ave.	In river	NRC 348336
Unknown	Unknown	Unknown	3/7/1997	Unknown sheen of unknown oil observed 50 ft x 100 ft. Location described as 12005 N Burgard.	In river	NRC 379360

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Unknown	Unknown	Unknown	4/15/1997	Unknown sheen of unknown oil observed downstream of Swan Island. Sheen was approximately 1 mile long.	In river	NRC 383733
Unknown	Unknown	Unknown	5/15/1997	Unknown oil observed	In river	NRC 387344
Unknown	7	Unknown	7/21/1997	Barge and tug observed a light blue sheen, approximately 1 mile.	In river	NRC 396039
Unknown	Unknown	Unknown	9/22/1997	Unknown silver sheen, 100 yds x 100 ft. Location described as 9030 NW St. Helens Rd docks.	In river	NRC 404552
Unknown	6	Unknown	10/7/1997	Unknown rainbow sheen observed 400 ft x 100 ft. Location described as 9030 NW St Helens Rd near dock.	In river	NRC 406565
Unknown	6	Unknown	10/22/1997	Unknown silvery sheen observed on south bank, 10 sq ft in diameter.	In river	NRC 408472
Unknown	Unknown	Unknown	10/11/1998	Unknown sheen observed, 15 ft in size. Location described as 5528 NW Doane.	In river	NRC 459405/ OERS 98-2439
Unknown	Unknown	Unknown	3/16/2000	Unknown sheen observed at 8010 NW St Helens Rd.	In river	NRC 523141
Unknown	Unknown	Unknown	8/29/2000	Unknown sheen of unknown oil observed in river due to equipment failure. Location described as Portland terminal 5528 NW Doane St.	In river	NRC 540398
Unknown	Unknown	Unknown	8/31/2001	Unknown sheen of unknown oil observed on east side of 800 N River St.	In river	NRC 578423
Unknown	Unknown	Unknown	9/19/2001	Unknown sheen of unknown oil observed at 1050 N River St.	In river	NRC 580237
Unknown	Unknown	Unknown	11/24/2001	Unknown gray sheen observed 200 ft x 10 ft.	In river	OERS # 01-3070
Unknown	Unknown	Unknown	10/4/2003	Unknown sheen observed in river at 7900 NW St Helens Rd.	In river	NRC 701558
Unknown	Unknown	Unknown	3/30/2004	Unknown sheen observed at MP 7.8.	In river	NRC 717417
Unknown	Unknown	Unknown	6/8/2004	Unknown sheen of unknown oil observed under St.Johns Bridge.	In river	NRC 724340
Unknown	Unknown	Unknown	7/14/2004	Unknown oil sheen observed at 5880 NW St Helens St.	In river	NRC 728320
Unknown	Unknown	Unknown	7/16/2004	Unknown oil sheen observed on river. Location not given.	In river	NRC 728516
Unknown	Unknown	Barge	10/8/2004	Sheen observed coming from barge at dock.	In river	OERS # 04-2287
Unknown	Unknown	Unknown	1/6/2005	Unknown sheen observed in river at 3660 NW Front Ave	In river	NRC 746355
Unknown	near T4	Unknown	1/11/2005	1/2 cup gear oil spilled to river. The skiff that caused the leak was towed from site, booms and pads applied.	Direct discharge to river	OERS # 05-0082
Unknown	Unknown	Unknown	2/18/2005	Cargill Grain reported unknown sheen from unknown source. Sheen was 15 ft x 200 ft at 800 N River St.	In river	NRC 750415/ OERS 05-0349
Unknown	Unknown	Unknown	2/18/2005	Unknown sheen observed near 800 N River St.	In river	NRC 751175
Unknown	Unknown	Unknown	3/4/2005	Unknown sheen observed from outfall adjacent to 6208 N Ensign.	In river	NRC 751705
Unknown	Unknown	Unknown	4/7/2005	Unknown sheen observed while driving across Fremont Bridge. Bright green sheen was located in river in front of tan colored warehouse.	In river	NRC 755134
Unknown	Unknown	Unknown	7/28/2005	Release of corrosive dye (basazol violet 49L corrosive dye 26% acetic acid) into storm drain from leaking storage container.	Storm drain	NRC 767209
Unknown	Unknown	Unknown	10/6/2005	Unknown sheen observed near 12005 N Burgard Rd	In river	NRC 775225
Unknown	Unknown	Unknown	10/17/2005	Unknown sheen observed from unknown source at river berth 503.	In river	NRC 776422
Unknown	Unknown	Unknown	1/16/2006	Unknown sheen observed at 9930 NW St. Helens Rd.	In river	NRC 785364
Unknown	Unknown	Unknown	3/6/2006	Unknown sheen observed at 14400 N Rivergate.	In river	NRC 790099
Unknown	~4	Unknown	8/9/2006	Unknown sheen observed at terminal 4, berth 410.	In river	NRC 807276
Unknown	Unknown	Unknown	9/27/2006	Unknown sheen observed at Swan Island Lagoon.	In river	NRC 812829
Unknown	Unknown	Unknown	10/17/2006	Unknown sheen observed at 14003 N Rivergate Blvd.	In river	NRC 815114
Unknown	Unknown	Unknown	10/18/2006	Unknown sheen originating from a storm drain.	Storm drain	NRC 815219 and 815373
Unknown	Unknown	Unknown	10/20/2006	Unknown sheen observed at 2600 N River Rd. Reported by Union Pacific Railroad to caller.	In river	NRC 815464
Unknown	Unknown	Unknown	11/5/2006	Unknown sheen reported at marina coming from storm drain located in Port of Portland. Caller reports rocks are covered with oil and boaters noticed the sheen the night prior. Sheen located at 6211 N Enson St.	In river	NRC 817181

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Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Unknown	Swan Island boat ramp	Unknown	11/22/2006	Discharge of motor oil from sunken pleasure craft due to unknown causes.	Direct discharge to river	NRC 818895
Unknown	Unknown	Unknown	11/28/2006	Petroleum (heavy lubricant oil) released from storm drain due to unknown causes.	Storm drain	NRC 819369
Unknown	6	Unknown	4/19/2007	Dark brown sludge substance observed in river at 6543 N Burlington Ave.	In river	NRC 832833
Unknown	Unknown	Unknown	5/12/2007	Unknown sheen observed. Location not reported.	In river	NRC 835165
Unknown	Unknown	Unknown	5/20/2007	Unknown sheen observed at 7900 NW St.Helens Rd.	In river	NRC 835976
Unknown	~6	Unknown	6/2/2007	Ghost sheen on Willamette, light sheen approximately 1/4 to 1/2 mile long, stretching across river, spotted from the air approximately 1/2 mile down stream from the St John's Bridge. CG was not able to locate sheen from the water.	In river	OERS # 07-1141
Unknown	3.5	Unknown	7/3/2007	Unknown sheen observed.	In river	NRC 840889
Unknown	Unknown	Unknown	7/17/2007	Unknown sheen observed at 8444 N St Helens Rd.	In river	NRC 842444
Unknown	MarCom dock/St Johns Bridge	Unknown	8/8/2007	Unknown sheen observed.	In river	NRC 844852
Unknown	Unknown	Unknown	9/11/2007	Unknown green material on water from unknown source. Sheen is along shoreline at 8010 NW St Helens Rd.	In river	NRC 848519
Unknown Tug	Unknown	Tug	9/26/2007	Sheen observed near tug at 8010 NW St Helens Rd.	In river	NRC 849970
Unknown	Terminal 4	Unknown	10/21/2007	Unknown sheen observed at 11011 N Lombard, Terminal 4	In river	NRC 852259
Unknown	Terminal 4	Unknown	11/7/2007	Unknown sheen observed at 11011 N Lombard.	In river	NRC 853864 and 853896/ OERS 07-2520
Unknown Tug	Unknown	Tug	11/10/2007	While fueling tug, one gallon of diesel fuel released.	Direct discharge to river	NRC 854197
Unknown	Unknown	Unknown	12/16/2007	Unknown sheen from unknown source coming out of ground and causing sheen on water at 9420 NW St. Helens Rd.	In river	NRC 857351
Unknown	Unknown	Unknown	12/19/2007	Unknown sheen observed at 14003 N Rivergate Blvd.	In river	NRC 857662
Unknown	Unknown	Unknown	1/19/2008	Unknown sheen observed at 8010 NW St Helens Rd.	In river	NRC 860091
Unknown Material	Unknown	Unknown	3/2/2008	Unknown orange material in river at 11011 N Lombard.	In river	NRC 863868
Unknown	7.5	Unknown	3/31/2008	Unknown sheen observed.	In river	NRC 866537
Unknown	Swan Island Lagoon	Unknown	4/27/2008	Unknown sheen observed.	In river	NRC 869229
Unknown	Unknown	Marine vessel	4/28/2008	Discharge of oil from vessel due to adding engine oil and spilling some into river near 6767 N Basin Ave.	Direct discharge to river	NRC 869332
Unknown	Unknown	Unknown	5/3/2008	Unknown sheen observed at 5531 NW Doane Ave.	In river	NRC 869759
Unknown	Unknown	Unknown	5/29/2008	Unknown sheen reported at New Star Terminal.	In river	NRC 872433
Unknown	Unknown	Unknown	7/23/2008	Unknown sheen observed at 14003 N Rivergate Blvd.	In river	NRC 877755
Unknown	Unknown	Unknown	7/29/2008	Unknown sheen observed at 5424 NW Doane Ave.	In river	NRC 878829
Unknown	Unknown	Unknown	8/9/2008	Unknown sheen observed at 800 N River St.	In river	NRC 880084
Unknown	Unknown	Unknown	9/8/2008	Unknown sheen observed at 12005 N Burgard Rd	In river	NRC 883248
Unknown	Berth 312 and 313 Swan Island	Unknown	9/28/2008	Unknown sheen observed.	In river	NRC 885545
Unknown	Unknown	Unknown	9/30/2008	Unknown oily sheen observed from outfall at end of street at 6211 N Ensign St. Material is releasing from unknown source into Swan Island Lagoon.	In river	NRC 885735
Unknown	Unknown	Unknown	10/6/2008	Unknown silvery sheen observed at 13333 N Rivergate Blvd near dock.	In river	NRC 886344

Table 4.3-6. Overwater Releases from Vessels and Other Spills in the Study Area.

Party	River Mile	Type of Operation (s)	Date of Release	Summary of Release	Pathway to River	Reference
Unknown	Unknown	Unknown	12/29/2008	Spill of material in sewer lines from unknown sources. Location described as Burgard/Manufacturing buildings 9006 N Sever Rd.	Storm drain	NRC 893571
Unknown	Unknown	Unknown	3/17/2009	Unknown sheen observed at Rivergate Terminal	In river	NRC 900220
Unknown	Unknown	Unknown	3/26/2009	Unknown sheen observed at marine shipyard in Swan Island.	In river	NRC 990974
Unknown	Unknown	Unknown	6/16/2009	Unknown sheen observed at 800 N River St.	In river	NRC 908784
Unknown	Unknown	Unknown	6/19/2009	Stormwater runoff observed producing sheen at 5880 NW St Helens Rd.	In river	NRC 909154
Unknown	Unknown	Unknown	7/2/2009	Unknown sheen observed under BNSF railroad bridge possible near Buoy 16.	In river	NRC 910513
Unknown	Unknown	Unknown	7/24/2009	Unknown sheen observed in vicinity of the transfer dock between the ship and shore. Sheen could be creosote from piling or sediment blown up from exhaust cooling system for ship. Location described as 14003 N Rivergate Blvd, middle of dock area.	In river	NRC 912658
Unknown	Unknown	Unknown	8/26/2009	Unknown discontinuous sheen observed	In river	OERS # 09-1967
Unknown	Unknown	Unknown	9/1/2009	Unknown sheen observed under ramp connector to floating barges at 6208 N Ensign St.	In river	NRC 916666
Unknown	Unknown	Unknown	10/14/2009	Unknown sheen observed at railroad bridge near Willamette Cove, south of St Johns bridge.	In river	NRC 920584
Unknown	3	Unknown	10/20/2009	Unknown sheen observed.	In river	NRC 921113
Unknown	Unknown	Unknown	10/24/2009	Unknown sheen observed at Terminal 411.	In river	NRC 921530
Unknown	Unknown	Unknown	12/24/2009	Unknown sheen in Swan Island Lagoon at 6208 N Ensign. Sheen is trapped between mooring barge and shoreline.	In river	NRC 927056
Unknown	Unknown	Unknown	6/22/2010	Unknown sheen observed at 13333 N Rivergate Blvd.	In river	NRC 945003
Unknown	Unknown	Unknown	8/10/2010	Unknown sheen observed at 5555 N Channel Ave.	In river	NRC 950484
Unknown	Unknown	Unknown	8/10/2010	Unknown silvery to rainbow sheen observed between docks at 13333 N Rivergate Blvd.	In river	NRC 950539
Unknown	Unknown	Unknown	10/4/2010	Unknown sheen possibly coming from old pilings 50 yds offshore at 14003 N Rivergate Blvd.	In river	NRC 955999

Notes:

- ^aNational Response Center Database, <http://www.nrc.uscg.mil/> NRC. 2002.

^bSupplemental Preliminary Assessment, Swan Island Upland Facility (Ash Creek and Newfields 2006).
- LWG - Lower Willamette Group

NARA - National Archives and Records Administration

NMIW - Northwest Marine Iron Works

NRC - National Response Center

OSFM - Oregon State Fire Marshal
- PCB - polychlorinated biphenyl

PSY - Portland Shipyard

USCG - U.S. Coast Guard

WISCO - Willamette Iron and Steel Company

Table 4.4-1. Summary of NPDES-permitted Discharges by Type of Permit in the Study Area.

NPDES Permit Type	Number of Permits (as of Feb. 2011)
General Permits for cooling water/heat pumps (GEN01)	8
General Permits for boiler blowdown (GEN05)	2
General Permits for treatment of groundwater (GEN15A)	4
General Permits for stormwater (GEN12A,C,Z)	86
Individual Permits for facilities not elsewhere classified that dispose of primary smelting/refining of metals not elsewhere classified (NPDES-IW-B08)	1
Individual Permits for facilities not elsewhere classified that dispose of process wastewater (includes remediated groundwater) (NPDES-IW- B14)	1
Individual Permits for facilities not elsewhere classified that dispose of process wastewater (NPDES-IW-B15)	6
Individual Permits for facilities not elsewhere classified that dispose of non-process wastewater (NPDES-IW-B16)	4
Municipal Separate Storm Sewer System Discharge Permit (NPDES-DOM-MS4-1) including CBWTP	1
Individual Permits for facilities that dispose of sewage (50 MGD or more) (NPDES-DOM-A1)	1

Notes:

CBWTP - Columbia Boulevard Wastewater Treatment Plant
MGD - million gallons per day
NPDES - National Pollutant Discharge Elimination System

Table 4.4-2. Discharge Monitoring Requirements in General NPDES Permits.

Type		No. in Study Area	Conventional Monitoring Parameters ^a	Chemicals Monitoring Requirements ^a	
				Parameter	Frequency
GEN01	Cooling water/heat pumps	9	Flow, temp, pH, total residual chlorine	---	---
GEN05	Boiler blowdown	2	Flow, temp, pH, TSS, total residual chlorine ^b	---	---
GEN12A	Stormwater: sand, gravel, and other non-metallic mining	1	pH, TSS, settleable solids, oil & grease; Oil & grease sheen, turbidity	---	Four times per year; once per month (when discharging)
GEN12C	Stormwater: construction activities - 1 or more acres	6	Inspection/visual characteristics	---	---
GEN12Z	Industrial stormwater	78	pH, TSS, oil & grease, E. coli ^b , visual monitoring	Copper, lead, zinc	Four times per year
GEN15A	Petroleum hydrocarbon cleanups	4	Flow, pH, visual monitoring	TPH, BTEX, benzene, lead ^b	Weekly to quarterly

Notes:

^a Permits for specific facilities may include other parameters.

^b Not applicable to all facilities.

--- = not available

BTEX - benzene, toluene, ethylbenzene, and xylenes

NPDES - National Pollutant Discharge Elimination System

TPH - total petroleum hydrocarbons

TSS - total suspended solids

Table 4.4-3. Shared Conveyance System Basin Characteristics and Potential Sources.

Outfall ID	River Bank	Organization	Outfall Size (Inches)	Outfall Material ^a	Outfall Status	CSO ^b /SSO ^c	2008 Stormwater Basin Acreage and Zoning ^d	COIs within Outfall Basin Area Identified during Independent Investigations ^e	Other Potential Sources in the Outfall Basins and Associated COIs (in Addition to Sources Identified during Independent Investigations—see previous column)	Potential Sources Adjacent or Upstream and Associated COIs
OF10A	West	CITY OF PORTLAND	30"	Concrete	Active		5 - commercial and residential		No ECSI sites have been identified in this basin.	Albers Mill (ECSI #4590) - PAHs, TPH, and metals
OF11	West	CITY OF PORTLAND	78"	Concrete	Active	CSO	942 - open space and residential, some light industrial		Hoyt St. Railroad (former) (ECSI #1080) - none Hoyt St. Trainyard Parcel 1 (ECSI #1624) - none Pearl Block (ECSI #4960) - none Sylvan Cleaners (ECSI #1897) - PCE and TCE Union Station Agric. Marketing Ctr. (ECSI #1962) - PAHs, TPH, and metals Union Station Horse Barn (ECSI #2407) - Metals, PAHs, benzene, and benzo(a)pyrene Union Station Track #5 (ECSI #1414) - PAHs, TPH, and metals US Postal Processing & Distribution (ECSI #2183) - VOCs, PAHs, TPH, and metals <i>Dan Rasmussen Co (former) (ECSI #1684) - VOCs and TPH</i> <i>Dynagraphics Inc. (ECSI #4523) - TPH</i> <i>Esquire Motors (ECSI #4906) - VOCs and TPH</i> <i>Gender Machine Works (ECSI #2313) - PAHs, TPH, and metals</i> <i>Lu Yen Restaurant (former) (ECSI #2197) - TPH</i> <i>Pacific States Galvanizing (former) (ECSI #1024) - Cadmium, chromium, lead, zinc, PCE, and TPH</i> <i>RiverTec Property (ECSI #3067) - TPH and metals</i> <i>Unocal Service Station #0738 (ECSI #1396) - TPH</i> <i>Wilbur-Ellis Co. (ECSI #1331) - VOCs, SVOCs, PAHs, TPH, pesticides, PCBs, and metals</i>	Centennial Mills (ESCI #5136) - TPH, metals, PCBs, and asbestos
OF12	West	CITY OF PORTLAND	16"	Unknown	Abandoned	CSO	NA		No ECSI sites have been identified in this basin.	
OF13	West	CITY OF PORTLAND	24"	Concrete	Active	CSO	8 - residential and heavy industrial		No ECSI sites have been identified in this basin.	
OF14	West	CITY OF PORTLAND	30"	Concrete	Active	CSO	23 - heavy/light industrial and residential		Zehrung (ECSI #187) - Pentachlorophenol and 2,4-D	POP Terminal 1 South (ECSI #2642) - None
OF15	West	CITY OF PORTLAND	102"	Concrete	Active	CSO	1 - heavy industrial	Sulzer Pumps (ECSI #1235) - PAHs,TPH, arsenic, copper, chromium, and zinc	<i>PGE Substation E (ECSI #3976) - none</i> <i>Consolidated Freightways Inc. (ECSI #32) - VOCs and TPH</i> <i>Drew Paints Inc. (ECSI #4465) - VOCs</i> <i>ESCO Plant #3 (ECSI #112) - Phenols</i> <i>Groundwater - NW 22nd Ave. (ECSI #2015) - VOCs</i>	POP Terminal 1 North (ECSI #3317) - None
OF16	West	CITY OF PORTLAND	36"	Concrete	Active	CSO ^f	66 - mostly heavy industrial, some highway	Calbag - Nicolai (ECSI #5059) -TPH, PCBs, metals, phthalates, PAHs Front Ave MP (ECSI #4008) - VOCs, PAHs, TPH, PCBs, and metals	Guilds Lake (ECSI #404) - none Nudelman & Son (ECSI #966) - none	POP Terminal 2 (ECSI #2769) - TPH and PAHs
OF17	West	CITY OF PORTLAND	90"	Concrete	Active	CSO/SSO	1,895 - mostly open space and heavy industrial, small % of residential	GE-NW 28 (No ECSI #, TSCA site) - PCBs <i>Paco Pumps (ECSI #146) - PCBs and TPH</i> Galvanizers (ECSI #1196) - TPH, PAHs, phthalates, arsenic, chromium, copper, and zinc. GW infiltration. <i>SFI (ECSI #5103) - VOCs, PCBs, TPH, PAHs, chromium, cadmium, and lead</i> GE Decommissioning (ECSI #4003) - PAHs, PCBs, TPH, arsenic, chromium, copper, and zinc. GW infiltration.	Guilds Lake Yard (ECSI #100) - Antimony, arsenic, cadmium, chromium, copper, mercury, selenium, zinc, TPH, VOCs, sodium cyanide, ethylene glycol, and creosote constituents <i>Mogul Corp. (ECSI #1307) - No COIs listed in ECSI</i> <i>King Ries (ECSI #4560) - Lead</i> <i>Mercer (ECSI #144) - Chromium and TPH</i> <i>AM Machine (ECSI #2261) - PAHs and TPH</i> <i>Schmidt Forge (ECSI #1347) - TPH</i>	POP Terminal 2 (ECSI #2769) - TPH and PAHs

Table 4.4-3. Shared Conveyance System Basin Characteristics and Potential Sources.

Outfall ID	River Bank	Organization	Outfall Size (Inches)	Outfall Material ^a	Outfall Status	CSO ^b /SSO ^c	2008 Stormwater Basin Acreage and Zoning ^d	COIs within Outfall Basin Area Identified during Independent Investigations ^e	Other Potential Sources in the Outfall Basins and Associated COIs (in Addition to Sources Identified during Independent Investigations—see previous column)	Potential Sources Adjacent or Upstream and Associated COIs
OF18	West	CITY OF PORTLAND	72"	Concrete	Active	CSO ^f	465 - open space and heavy industrial	Columbia American Plating (ECSI #29) - VOCs, SVOCs, PCBs, metals, Other (e.g., cyanide), PAHs, Gunderson (ECSI #1155) - TPH, butyltins, PCBs, phthalates, arsenic, copper, chromium and zinc McWhorter Technologies (ECSI #135) - VOCs, SVOCs, PAHs, TPH, and phthalates Christenson Oil (ECSI #2426) - Cadmium, copper, lead, mercury, zinc, PAHs, VOCs, and TPH Container Recovery (ECSI #4015) - Cadmium, lead, zinc, PAHs, PCBs, and phthalates Wilhelm Trucking (ECSI #69) - PCBs, metals Trumbull (ECSI # 1160) - PAHs, PCBs, phthalates, arsenic, chromium, copper, and zinc Univar/Van Waters (ECSI #330) - VOCs, TPH, pesticide/herbicides, metals. GW infiltration. Container Management (ECSI #4784) - PAHs, TPH, PCBs, metals, phthalates, pesticides ANRFS (ECSI #1820) - Arsenic, chromium, copper, zinc, PCBs, PAHs, BEHP Ashland Chemical (ECSI #1076) - Arsenic, chromium, copper, zinc, PCBs, PAHs, BEHP Carson Oil (ECSI #1405) - VOCs, PAHs, TPH, arsenic, chromium, copper, zinc, PCBs, BEHP Texaco/Equilon - Bulk Terminal (ECSI #169) - PAHs, VOCs, and TPH. GW infiltration.	Texaco/Equilon - Pipeline (ECSI #2117) - PAHs, VOCs, and TPH PTRR (ECSI #100) - Antimony, arsenic, cadmium, chromium, copper, mercury, selenium, zinc, PAHs, PCBs, phenols, TPH, VOCs, sodium cyanide, ethylene glycol, and creosote constituents Schnitzer Investment - NW 35th (ECSI #2424) - VOCs, SVOCs, and metals	Gunderson (ECSI #1155) - Metals, butyltins, PCBs, phthalates, and TPH
OF19	West	CITY OF PORTLAND	42"	Concrete	Active	CSO ^f	486 - open space and heavy residential, small % of highway	Greenway Recycling (ECSI #4655) - VOCs, TPH, PCBs, arsenic, chromium, copper, and zinc PGE - Forest Park (ECSI #2406) - PCBs Calbag Metals (ECSI #2454) - Cadmium, lead, mercury, zinc, PCBs, and phthalates Conoco - Willbridge Terminal (ECSI #177) - VOCs, TPH, and metals Chevron Asphalt Refinery (ECSI #1281) - VOCs, PAHs, TPH, and metals. GW infiltration. Front Avenue LP (ECSI #1239)-Metals, PAHs, PCBs, VOCs, SVOCs, phthalates, and TPH Mt. Hood Chemical Corp. (ECSI #81) - methylene chloride (VOCs). GW infiltration. Anderson Brothers (ECSI #970) - VOCs, PAHs, TPH, PCBs, metals, pesticides, phthalates Brazil & Co (ECSI #1026) - PCBs	Chapel Steel (ECSI #4920) - Aluminum, antimony, lead, nickel, zinc, PAHs, PCBs, and BEHP Penske Truck Leasing - NW Yeon (ECSI #5055) - TPH, PAHs, VOCs, SVOCs, and metals Dura Industries (ECSI #111) - Cadmium, chromium, and lead Mt. Hood Chemical Property (ECSI #1328) - VOCs Kittridge (ECSI #2442) - Cadmium, lead, mercury, zinc, PCBs, VOCs, and TPH Willbridge Switching Yard (ECSI #3395) - Metals Christenson Oil (ECSI #2426) - VOCs, PAHs, TPH, and metals	Gunderson (ECSI #1155) - Metals, butyltins, PCBs, phthalates, and TPH Lakeside Industries (ECSI #2372) - VOCs, PAHs, TPH, and metals Shaver Transportation (ECSI #2377) - none Front Avenue LP (ECSI #1239) - Metals, PAHs, PCBs, VOCs, SVOCs, phthalates, and TPH
OF19A	West	CITY OF PORTLAND	60"	Concrete	Active		1.5 - heavy industrial		No ECSI sites have been identified in this basin.	Gunderson (ECSI #1155) - Metals, butyltins, PCBs, phthalates, and TPH Front Ave LP (ECSI #1239) - VOCs, SVOCs, PAHs, TPH, PCBs, metals, and phthalates Lakeside Industries (ECSI #2372) - VOCs, PAHs, TPH, and metals

Table 4.4-3. Shared Conveyance System Basin Characteristics and Potential Sources.

Outfall ID	River Bank	Organization	Outfall Size (Inches)	Outfall Material ^a	Outfall Status	CSO ^b /SSO ^c	2008 Stormwater Basin Acreage and Zoning ^d	COIs within Outfall Basin Area Identified during Independent Investigations ^e	Other Potential Sources in the Outfall Basins and Associated COIs (in Addition to Sources Identified during Independent Investigations—see previous column)	Potential Sources Adjacent or Upstream and Associated COIs
OF22	West	CITY OF PORTLAND	60"	Concrete	Active	CSO ^f	94 - mostly heavy industrial, some open space and highway	McCall Oil (ECSI #134) - PAHs, PCBs, butyltins, VOCs, SVOCs, BEHP, TPH, arsenic, chromium, copper, lead, and zinc Chevron Asphalt Refinery (ECSI #1281) - Metals, PAHs, VOCs, and TPH. GW infiltration. Willbridge Terminal (ECSI # 1549) - Metals, PAHs, pesticides/herbicides, phthalates, VOCs, and TPH		McCall Oil (ECSI #134) - Metals, PAHs, PCBs, VOCs, SVOCs, BEHP, and TPH
OF22B	West	CITY OF PORTLAND	48"	Concrete	Active	SSO	32 - heavy industrial	Arkema (ECSI #398) - DDx		Arkema (ECSI #398) - DDx
								Gould Inc./NL Industries Inc. (ECSI #49) - Arsenic, lead, zinc, PAHs, PCBs, pesticides/herbicides, and VOCs. Historical discharges from Doane Lake, and historical GW infiltration into OF22B. Schnitzer Investmentand Air Liquide - Doane Lake (ECSI #395) - Arsenic, Mercury, PCBs, and VOCs. Historical discharges from Doane Lake, historical GW infiltration into OF22B, and stormwater discharge into OF 22B. Rhone Poulenc—East Doane Lake (ECSI #155) - VOCs, pesticides/herbicides, metals, and dioxin/furans. Historical discharges from Doane Lake and historical GW infiltration into OF22B.		Gould Inc./NL Industries Inc. (ECSI #49) - Arsenic, lead, zinc, PAHs, PCBs, pesticides/herbicides, and VOCs. Historical discharges from Doane Lake. Schnitzer Investment and Air Liquide - Doane Lake (ECSI #395) - Arsenic, Mercury, PCBs, and VOCs. Historical discharges from Doane Lake. Rhone Poulenc—East Doane Lake (ECSI #155) - VOCs, pesticides/herbicides, metals, and dioxin/furans. Historical Discharges from Doane Lake, and the outfall for the former Rhone Poulenc property is located near RM 6.9.
OF22C	West	CITY OF PORTLAND	84"	Concrete	Active		1,107 - mostly open space, small % of heavy industrial, residential and highway	Koppers Industries Inc. (ECSI #1348) - See Gasco (ECSI #84) - VOCs, SVOCs, PAHs, TPH, and metals Gasco (ECSI #84) - PAHs and cyanide. GW infiltration Siltronic (ECSI # 183) - VOCs, SVOCs, PAHs, TPH, and metals Santa Fe Pacific Pipeline Co. (ECSI #2104) - none	St. Helens Road Petroleum (ECSI #2630) - VOCs, PAHs, and TPH V & K Services (ECSI #2423) - VOCs and TPH	
OF22D	West	CITY OF PORTLAND	48"	CSP	Active		240 - mostly open space, small % of residential and highway		No ECSI sites have been identified in this basin.	Foss Maritime/Brix Maritime (ECSI #2364) - VOCs, PAHs, and TPH
OF23	West	CITY OF PORTLAND	27"	RCP	Abandoned	CSO	NA - discharges to CBWTP		No ECSI sites have been identified in this basin.	ExxonMobil (ECSI #137) - VOCs, PAHs, TPH, and metals
OF24	West	CITY OF PORTLAND	12"	CMP	Emergency Overflow point	CSO/SSO	NA - discharges to CBWTP		<i>Babcock Land Co. (ECSI #2361) - No COIs listed in ECSI</i>	West Coast Adhesive (ECSI #333) - phenol, formaldehyde, and TPH
OF42	East	CITY OF PORTLAND	10"	STL	Active	CSO ^f	6 - commercial and open space		No ECSI sites have been identified in this basin.	
OF43	East	CITY OF PORTLAND	56"	Other	Active	CSO	51 - light industrial	Tucker Building (ECSI #3036) - Metals, PAHs, PCBs, and TPH Westinghouse/CBS (ECSI #4497) - PCBs	Master Chemical (ECSI #1302) - No COIs listed in ECSI <i>Mammal Survey & Control Service (ECSI #1301) - Pesticides Shopping Center Prop. - Nature's Fresh NW (ECSI #1855) - VOCs Steve Adams Prop. (ECSI #1500) - PCBs Union Ave - PBC Site (ECSI #991) - PCBs Wagstaff Battery Mrg. Co. (ECSI #1243) - TPH and lead</i>	

Table 4.4-3. Shared Conveyance System Basin Characteristics and Potential Sources.

Outfall ID	River Bank	Organization	Outfall Size (Inches)	Outfall Material ^a	Outfall Status	CSO ^b /SSO ^c	2008 Stormwater Basin Acreage and Zoning ^d	COIs within Outfall Basin Area Identified during Independent Investigations ^e	Other Potential Sources in the Outfall Basins and Associated COIs (in Addition to Sources Identified during Independent Investigations—see previous column)	Potential Sources Adjacent or Upstream and Associated COIs
OF44	East	CITY OF PORTLAND	12"	STL	Active	CSO ^f	17 - mostly light industrial, some heavy industrial	Tucker Bldg. (ECSI #3036) - Metals, PAHs, PCBs, and TPH PacifiCorp Albina Riverlots (ECSI #5117) - PCBs and TPH. GW infiltration.	Valvoline (ECSI #3215) - VOCs, PAHs, TPH, and metals Vermiculite NW Inc. (former) (ECSI #2761) - asbestos	
OF44A	East	CITY OF PORTLAND	72"	STL	Active	CSO/SSO	139 - mostly residential and light industrial, some open space and commercial	PacifiCorp Knott Substation (ECSI #5117) - None.	Tarr Inc. (ECSI #1139) - VOCs and TPH Coverall Uniform Supply (ECSI #1775) - PCE Standard Dairy (ECSI #2055) - VOCs and TPH Abraham's Fabric Clinic (ECSI #4592) - No COIs listed in ECSI Grant Warehouse (ECSI #2385) - Asbestos, PAHs, TPH, and metals McCann/Lenske Property (ECSI #4711) - TPH and lead North Portland Bible College (ECSI #4354) - TPH Nurenberg Scientific Co. (ECSI #87) - VOCs and metals Portland Cleaning Works (ECSI #3529) - TPH and PCE	
OF45	East	CITY OF PORTLAND	27"	Concrete	Active	CSO	10 - heavy and light industrial	UPRR (ECSI #178) - Arsenic, chromium, lead, zinc, PAHs, PCBs, phthalates, SVOCs, and TPH		
OF46	East	CITY OF PORTLAND	80"	Varies	Active	CSO	77 - residential, open space and heavy industrial	UPRR (ECSI #178) - Arsenic, chromium, lead, zinc, PAHs, PCBs, phthalates, SVOCs, and TPH	Industrial Battery Bldg (ECSI #935) - Metals Abraham's Fabric Clinic (ECSI #4592) - No COIs listed in ECSI Betty Campbell Bldg. (ECSI #1902) - TPH and PAHs Flowers by Victor (ECSI #4712) - Pesticides Grant Warehouse (ECSI #2385) - Asbestos, PAHs, TPH, and metals Henry Wong (ECSI #989) - No COIs listed in ECSI McCann/Lenske Property (ECSI #4711) - TPH and lead North Portland Bible College (ECSI #4354) - TPH Nurnberg Scientific Co. (ECSI #87) - VOCs and metals Portland Cleaning Works (ECSI #3529) - VOCs PP&L Mason Station (ECSI #2136) - PCBs	UPRR (ECSI #178) - Arsenic, chromium, lead, zinc, PAHs, PCBs, phthalates, SVOCs, and TPH
OF47	East	CITY OF PORTLAND	48"	CSP	Active	CSO	9.5 - light industrial	UPRR (ECSI #178) - Arsenic, chromium, lead, zinc, PAHs, PCBs, phthalates, SVOCs, and TPH	Elks Cleaners (ECSI #4954) - TCE (VOCs) Sunny's Dry Cleaners (ECSI #2848) - No COIs listed in ECSI	UPRR (ECSI #178) - Arsenic, chromium, lead, zinc, PAHs, PCBs, SVOCs, and TPH
OF48	East	CITY OF PORTLAND	30"	CMP	Active	CSO	6 - residential 1.5 - stormwater treatment facility		No ECSI sites have been identified in this basin.	Triangle Park (ECSI #277) - VOCs, SVOCs, PAHs, TPH, pesticides, PCBs, and metals McCormick & Baxter (ECSI # 74) - PAHs, metals, and creosote
OF49	East	CITY OF PORTLAND	15"	Concrete	Active	CSO	31 - mostly residential, some commercial and open space 1.5 acres - stormwater treatment facility		No ECSI sites have been identified in this basin.	Willamette Cove (ECSI #2066) - none
OF50	East	CITY OF PORTLAND	30"	Concrete	Active	CSO	39 - mix residential, commercial, and light industrial 1 acre- stormwater treatment facility		BES WPCL (ECSI #2452) - none Crawford Street Corp. (ECSI #2363) - VOCs, PAHs, TPH, PCBs, arsenic, chromium, copper, and zinc	
OF52	East	CITY OF PORTLAND	30"	Unknown	Active	CSO/SSO	23 - mostly light industrial with some residential and open space	Crawford Street Corp. (ECSI #2363) - VOCs, PAHs, TPH, PCBs, arsenic, chromium, copper, and zinc	Unocal Service Station #3911 (ECSI #1593) - TPH and PCBs	
OF52A	East	CITY OF PORTLAND	36"	Concrete	Active		25 - mostly light industrial and residential with some commercial and open space		No ECSI sites have been identified in this basin.	Mar Com North Parcel (ECSI #4797) - none Mar Com South Parcel (ECSI #2350) - VOCs, SVOCs, PAHs, TPH, PCBs, metals, butyltins, and phthalates

Table 4.4-3. Shared Conveyance System Basin Characteristics and Potential Sources.

Outfall ID	River Bank	Organization	Outfall Size (Inches)	Outfall Material ^a	Outfall Status	CSO ^b /SSO ^c	2008 Stormwater Basin Acreage and Zoning ^d	COIs within Outfall Basin Area Identified during Independent Investigations ^e	Other Potential Sources in the Outfall Basins and Associated COIs (in Addition to Sources Identified during Independent Investigations—see previous column)	Potential Sources Adjacent or Upstream and Associated COIs
OF52C	East	CITY OF PORTLAND	36"	Concrete	Active		22 - light industrial		Borden Packaging & Ind. Prod. (ECSI #1277) - chlorinated- and alcohol-based solvents	Port of Portland T4 Slip 1 (ECSI # 2356) - PAHs, TPH, pesticides/herbicides, PCBs, metals, and phthalates
OF53	East	CITY OF PORTLAND	48"	CMP	Active	CSO	21 - residential		Multnomah County - St. Johns Site (ECSI #2421) - VOCs and TPH	POP T4 Auto Storage (ECSI #172) - none
OF53A	East	CITY OF PORTLAND	48"	Concrete	Active	SSO	82 - heavy industrial	Consolidated Metco (ECSI #3295) - VOCs, PAHs, TPH, PCBs, phthalates, zinc, and copper. GW infiltration.	JR Simplot (ECSI #3343) - TPH S. Rivergate Industrial Park (ECSI #2980) - No COIs listed in ECSI	EVRAZ (ECSI #141), during reverse flow - metals, PAHs, PCBs, and TPH
								EVRAZ (ECSI# 141) - Metals, PAHs, PCBs, and TPH	Port of Portland Tract O (ECSI #5307) - none listed	
								Fred Devine Diving and Salvage (ECSI #2365) - Metals, PAHs, SVOCs, TPH, and phthalates Freightliner TMP (ECSI #2366) - Metals, PAHs, and PCBs	Roadway Express (ECSI #3807) - TPH, nitric acid, and methyl iodide US Navy and Marine Reserve Center (ECSI #5109) - TPH	
OFM-1	East (Mocks Bottom)	CITY OF PORTLAND	60"	CSP	Active	SSO	162 - light			Cascade General (ECSI #271) - VOCs, PAHs, TPH, PCBs, metals, butyltins, and phthalates
OFM-2	East (Mocks Bottom)	CITY OF PORTLAND	60"	CSP	Active		127 - light industrial		GI Trucking (ECSI #1840) - TPH	Cascade General (ECSI #271) - VOCs, PAHs, TPH, PCBs, metals, butyltins, and phthalates
OFM-3	East (Mocks Bottom)	CITY OF PORTLAND	60"	CSP	Active		111 - light industrial	Freightliner TMP Parts Plant (ECSI #115) - Metals Fred Meyer - Swan Island (ECSI #44) - PCBs		Cascade General (ECSI #271) - VOCs, PAHs, TPH, PCBs, metals, butyltins, and phthalates
OFS-1	East (Swan Island)	CITY OF PORTLAND	36"	CMP	Active		25 - heavy industrial, some light industrial	Cascade General (ECSI #271) - VOCs, PAHs, TPH, PCBs, metals, butyltins, and phthalates		Cascade General (ECSI #271) - VOCs, PAHs, TPH, PCBs, metals, butyltins, and phthalates
OFS-2	East (Swan Island)	CITY OF PORTLAND	36"	CSP	Active		27 - light industrial, some heavy industrial		AutoVending (ECSI #1430) - TPH Crosby & Overton (ECSI #877) - PCBs	Cascade General (ECSI #271) - VOCs, PAHs, TPH, PCBs, metals, butyltins, and phthalates
OFS-5	East (Swan Island)	CITY OF PORTLAND	36"	CSP	Active		39 - light industrial		No ECSI sites have been identified in this basin.	
OFS-6	East (Swan Island)	CITY OF PORTLAND	36"	CSP	Active		22 - heavy industrial, some light industrial			
Other Non-City Shared Conveyance Systems										
WR-121	East	Burgard Industrial Park	Unknown	Unknown	Active		19 - heavy industrial	Schnitzer Steel/Calbag (ECSI #2355) - VOCs, TPH, PCBs, and metals		
WR-123	East	Burgard Industrial Park	48"	Concrete	Active		101 - heavy industrial	Boydston Metal Works (ECSI #2362) - PAHs, PCBs, and metals NW Pipe (ECSI #138) - VOCs, PAHs, TPH, PCBs, and metals Joseph Ryerson (ECSI #2441) - No COIs listed in ECSI		
WR-124	East	Burgard Industrial Park	48"	Concrete	Active	SSO	1.4 - heavy industrial	Schnitzer Steel/Calbag (ECSI #2355) - VOCs, PCBs, TPH, and metals NW Pipe (ECSI #138) - VOCs, PAHs, TPH, PCBs, and metals		
WR-517	East	Burgard Industrial Park	Unknown	Unknown	Active		10 - heavy industrial		Portland Container Repair (ECSI #2375) - TPH	Schnitzer Steel/Calbag (ECSI #2355) - VOCs, PCBs, TPH, and metals
WR-83	East	Burgard Industrial Park	30"	Unknown	Active		6 - heavy industrial		Jefferson Smurfit (ECSI #2371) - TPH and metals Premier Edible Oils (ECSI #2013) - VOCs, PAHs, TPH, and metals	Schnitzer Steel/Calbag (ECSI #2355) - VOCs, PCBs, TPH, and metals
WR-84	East	Burgard Industrial Park	30"	Unknown	Active		14 - heavy industrial		Jefferson Smurfit (ECSI #2371) - TPH and metals Premier Edible Oils (ECSI #2013) - VOCs, PAHs, TPH, and metals Schnitzer Steel/Calbag (ECSI #2355) - VOCs, PCBs, TPH, and metals Time Oil (ECSI #170) - PAHs, TPH, and metals	
WR-85	East	Burgard Industrial Park	10"	Concrete	Abandoned		Unknown - heavy industrial		Basin area has not been delineated.	Premier Edible Oils (ECSI #2013) - VOCs, PAHs, TPH, and metals Schnitzer Steel/Calbag (ECSI #2355) - VOCs, PCBs, TPH, and metals

Table 4.4-3. Shared Conveyance System Basin Characteristics and Potential Sources.

Outfall ID	River Bank	Organization	Outfall Size (Inches)	Outfall Material ^a	Outfall Status	CSO ^b /SSO ^c	2008 Stormwater Basin Acreage and Zoning ^d	COIs within Outfall Basin Area Identified during Independent Investigations ^e	Other Potential Sources in the Outfall Basins and Associated COIs (in Addition to Sources Identified during Independent Investigations—see previous column)	Potential Sources Adjacent or Upstream and Associated COIs
WR-21	East	Burgard Industrial Park	36"	Sump	Abandoned		Unknown - heavy industrial		Basin area has not been delineated.	Premier Edible Oils (ECSI #2013) - VOCs, PAHs, TPH, and metals Schnitzer Steel/Calbag (ECSI #2355) - VOCs, PCBs, TPH, and metals
WR-207	West	Unknown Multiparty	24"	STL	Active		Unknown - mostly highway		Basin area has not been delineated.	USACE Portland Moorings (ECSI #1641) - PAHs, TPH, metals, and butyltins
WR-514	East	ODOT	Unknown	Unknown	Inactive		NA - former drainage from St. Johns Bridge		Basin area has not been delineated.	
WR-306	East	ODOT	48"	Concrete	Active		Unknown - mostly highway		Basin area has not been delineated.	
WR-308	East	Unknown Multiparty	15"	Concrete	Active		Unknown - mostly highway		Basin area has not been delineated.	
WR-307 (aka OF12A)	West	ODOT	48"	Concrete	Active	CSO	Unknown - mostly highway		Basin area has not been delineated.	
WR-510	West	ODOT	Unknown	Unknown	Active		Unknown		Basin area has not been delineated.	
WR-210	West	Unknown Multiparty	48"	CMP	Abandoned		Unknown		Basin area has not been delineated.	Foss Maritime/Brix Maritime (ECSI #2364) - VOCs, PAHs, and TPH
WR-126	East	Unknown Multiparty	36"	CMP	Active		Unknown		Basin area has not been delineated.	Linnton Plywood (ECSI #2373) - VOCs, SVOCs, PAHs, TPH, PCBs, metals, and phthalates
WR-79	West	Unknown Multiparty	36"	Concrete	Active		Unknown		Basin area has not been delineated.	Owens Corning Linnton (ECSI #1036) - none
WR-102	West	Unknown Multiparty	48"	Concrete	Active		Unknown		Basin area has not been delineated.	ARCO (ECSI #1528) - VOCs, PAHs, TPH, and metals
WR-202	East	Unknown Multiparty	60"	CMP	Active		Unknown		Basin area has not been delineated.	ExxonMobil (ECSI #137) - VOCs, PAHs, TPH, and metals
WR-205	West	Unknown Multiparty	24"	Concrete	Active		Unknown		Basin area has not been delineated.	Gasco (ECSI #84) - VOCs, SVOCs, PAHs, TPH, metals, and cyanide
WR-203	East	Unknown Multiparty	36"	CMP	Active		Unknown		Basin area has not been delineated.	
WR-204	East	Unknown Multiparty	24"	Unknown	Active		Unknown		Basin area has not been delineated.	
WR-211	West	Unknown Multiparty	36"?	CMP	Active		Unknown		Basin area has not been delineated.	Marine Finance (ECSI #2352) - VOCs, PAHs, TPH, metals, and butyltins
WR-209	West	Unknown Multiparty	48"	Unknown	Active		Unknown		Basin area has not been delineated.	ST Services/Shore Terminal (ECSI #1989) - none
WR-208	West	Unknown Multiparty	24"	STL	Active		Unknown		Basin area has not been delineated.	Marine Finance (ECSI #2352) - VOCs, PAHs, TPH, metals, and butyltins
WR-206	West	Unknown Multiparty	24"	STL	Active		Unknown		Basin area has not been delineated.	
Saltzman Creek ^f	West	Unknown Multiparty	96"	Concrete	Active		1,076 - open space and heavy industrial, small % of highway and residential		GS Roofing (ECSI #117) - VOCs, PAHs, TPH, and metals St. Helens Road Petroleum Contamination (ECSI # 2630) - VOCs, PAHs, and TPH V&K Services (ECSI # 2423) - VOCs, and TPH Willbridge Terminal (ECSI #1549) - VOCs, PAHs, TPH, pesticides/herbicides, metals, and phthalates	GS Roofing (ECSI #117) - VOCs, PAHs, TPH, and metals. Discharges through WR-390 and WR-391

Table 4.4-3. Shared Conveyance System Basin Characteristics and Potential Sources.

Outfall ID	River Bank	Organization	Outfall Size (Inches)	Outfall Material ^a	Outfall Status	CSO ^b /SSO ^c	2008 Stormwater Basin Acreage and Zoning ^d	COIs within Outfall Basin Area Identified during Independent Investigations ^e	Other Potential Sources in the Outfall Basins and Associated COIs (in Addition to Sources Identified during Independent Investigations—see previous column)	Potential Sources Adjacent or Upstream and Associated COIs
Notes:										
This table is not an exhaustive list of current or historical sources of contamination. The table includes sites identified in DEQ’s ECSI database and sites where TSCA cleanup documents could be located. Identification and evaluation of potential sources is ongoing.										
<i>Italicized</i> cells indicate upland areas within current or former CSO basins. Non-italicized text indicates upland areas within stormwater basins.										
^a Codes for outfall materials are as follows:										
PVC - polyvinyl chloride			CSP - corrugated steel pipe							
Metal			Plastic							
STL - Steel			Ditch - drainage pipe, absent of hard-piping							
Concrete			Other - variable not listed here							
CMP - corrugated metal pipe			Unknown							
^b CSO listed if outfall is a current or historical CSO; see Table 3.2-3 for additional information.										
^c SSO listed if there is an emergency overflow connection from a sanitary pump station to the outfall.										
^d Separated stormwater basins. For CSO outfalls already controlled, these separated areas will continue to discharge stormwater to the river downstream of the diversion. For CSO outfalls controlled in 2011, some of these separated storm basins are diverted to the tunnel.										
^e COIs are identified based on recent investigations of up-the-pipe investigations and site summaries. These sources have known or likely stormwater pathways and therefore are included in the conceptual site model (see Section 10).										
^f Outfall historically drained combined flows before full separation. Contributions of sanitary and industrial wastewater unknown unless noted in Table 3.2-3.										
^g This outfall is not included in the outfall layer on the maps in Sections 3 and 4.										
BEHP - bis(2-ethylhexyl)phthalate				ODOT - Oregon Department of Transportation				T4 - Port of Portland Terminal 4		
BES - City of Portland Bureau of Environmental Services				PAH - polycyclic aromatic hydrocarbon				TCE - trichloroethene		
CBWTP - Columbia Boulevard Wastewater Treatment Plant				PCB - polychlorinated biphenyl				TPH - total petroleum hydrocarbons		
COI - chemical of interest				PCE - tetrachloroethene				TSCA - Toxic Substances Control Act		
CSO - combined sewer overflow				PGE - Portland General Electric				UPRR - Union Pacific Railroad		
ECSI - Environmental Cleanup Site Information				POP - Port of Portland				USACE - U.S. Army Corps of Engineers		
GW - groundwater				SSO - sanitary sewer overflow				VOC - volatile organic compound		
NA - not available				SVOC - semivolatile organic compound				WPCL - Water Pollution Control Laboratory		

Table 4.4-4. LWG Summary Statistics for Sediment Trap and Stormwater Based on Land Use Type.

Analyte	CAS RN	Units	N	N Detected	% Detected	Detected Concentrations					Detected and Nondetected Concentrations				
						Minimum ^a	Maximum ^a	Mean	Median ^b	95th ^b	Minimum (full DL) ^a	Maximum (full DL) ^a	Mean (half DL)	Median (half DL) ^b	95th (half DL) ^b
Heavy Industrial															
Solid															
Metals															
Arsenic	7440-38-2	mg/kg	13	13	100	3.53	58.6	23.4	22.6	52.5	3.53	58.6	23.4	22.6	52.5
Chromium	7440-47-3	mg/kg	13	13	100	15.5 T	726	165	107	540	15.5 T	726	165	107	540
Copper	7440-50-8	mg/kg	13	13	100	22.6 T	59400	4810	165	24300	22.6 T	59400	4810	165	24300
Zinc	7440-66-6	mg/kg	13	13	100	319	21000	3150	1280	12100	319	21000	3150	1280	12100
PCBs ^c															
Total PCBs	TOTPCBS	µg/kg	24	24	100	48.4 JT	9900 JT	977	288	2600	48.4 JT	9900 JT	977	288	2600
Pesticides															
Aldrin	309-00-2	µg/kg	18	3	16.7	2.4 J	48 NJ	18.8	5.9	43.8	0.76 U	48 NJ	5.82	2.38	17.8
Dieldrin	60-57-1	µg/kg	18	1	5.56	470 J	470 J	470	470		0.8 U	470 J	29.3	2.03	79
Total Chlordanes	TOTCHLDANE	µg/kg	18	10	55.6	1.3 JT	1000 JT	155	20.5	730	1.3 JT	5800 UT	251	16	1290
Total DDx	E966176	µg/kg	18	18	100	4.8 JT	160000 T	9070	81	24700	4.8 JT	160000 T	9070	81	24700
Polycyclic Aromatic Hydrocarbons															
Total PAHs	130498-29-2	µg/kg	14	14	100	960 JT	700000 T	117000	42000	427000	960 JT	700000 T	117000	42000	427000
Phthalates															
Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	14	14	100	280 J	120000	27200	13300	101000	280 J	120000	27200	13300	101000
Water															
Metals															
Arsenic (dissolved)	7440-38-2	µg/L	76	68	89.5	0.024 J	21.1	1.88	0.362	12.7	0.024 J	21.1	2.13	0.576	12
Arsenic	7440-38-2	µg/L	100	91	91	0.091 J	19.8	2.93	0.87	17.2	0.091 J	20 U	3.12	1.03	16.9
Chromium (dissolved)	7440-47-3	µg/L	76	60	78.9	0.3	13.6	1.95	0.865	6.97	0.23 U	13.6	1.6	0.78	6.93
Chromium	7440-47-3	µg/L	97	94	96.9	0.62	495	20	3.56	111	0.62	495	19.4	3.44	110
Copper (dissolved)	7440-50-8	µg/L	76	76	100	1.9	99.9	16.5	7.93	61.2	1.9	99.9	16.5	7.93	61.2
Copper	7440-50-8	µg/L	97	97	100	3.1	809	66.9	23.3	296	3.1	809	66.9	23.3	296
Zinc (dissolved)	7440-66-6	µg/L	76	71	93.4	1.3	2300	240	99.3	924	1.3	2300	226	94.1	745
Zinc	7440-66-6	µg/L	97	97	100	43.6	11900	547	233	2360	43.6	11900	547	233	2360
PCBs ^c															
Total PCBs (dissolved)	TOTPCBS	µg/L	21	20	95.2	0.00000409 JT	0.052 T	0.00875	0.00517	0.0262	0.00000409 JT	0.052 T	0.00833	0.00478	0.0248
Total PCBs	TOTPCBS	µg/L	88	88	100	0.000344 JT	11.6 JT	0.352	0.0526	1.04	0.000344 JT	11.6 JT	0.352	0.0526	1.04
Pesticides															
Aldrin (dissolved)	309-00-2	µg/L	12	1	8.33	0.00034 J	0.00034 J	0.00034	0.00034	--	0.00034 J	0.0061 U	0.00133	0.000775	0.00275
Aldrin	309-00-2	µg/L	25	6	24	0.00022 J	0.027	0.0118	0.0109	0.0255	0.00022 J	0.027	0.00389	0.00135	0.0208
Dieldrin (dissolved)	60-57-1	µg/L	12	1	8.33	0.0015	0.0015	0.0015	0.0015	--	0.00042 U	0.0059 U	0.00134	0.00113	0.0027
Dieldrin	60-57-1	µg/L	25	7	28	0.00079	0.25	0.11	0.089	0.244	0.0004 U	0.25	0.0328	0.0013	0.222
Total Chlordanes (dissolved)	TOTCHLDANE	µg/L	12	7	58.3	0.00054 JT	0.023 JT	0.01	0.013	0.0206	0.00054 JT	0.023 JT	0.00783	0.0054	0.0186
Total Chlordanes	TOTCHLDANE	µg/L	25	14	56	0.00098 JT	0.13 JT	0.0302	0.0122	0.101	0.00098 JT	0.54 UT	0.0336	0.0084	0.121
Total DDx (dissolved)	E966176	µg/L	12	11	91.7	0.00066 JT	0.35 JT	0.0382	0.0081	0.183	0.00066 JT	0.35 JT	0.0352	0.0065	0.166
Total DDx	E966176	µg/L	25	22	88	0.0048 JT	11 JT	0.858	0.0185	3.51	0.002 UJT	11 JT	0.755	0.015	3.22
Polycyclic Aromatic Hydrocarbons															
Total PAHs (dissolved)	130498-29-2	µg/L	28	20	71.4	0.0077 JT	15 JT	2.31	0.965	9.97	0.0077 JT	15 JT	1.68	0.154	7.84
Total PAHs	130498-29-2	µg/L	86	79	91.9	0.048 JA	37 JT	3.26	0.97	13	0.048 JA	37 JT	3.01	0.715	12
Phthalates															
Bis(2-ethylhexyl)phthalate (dissolved)	117-81-7	µg/L	16	4	25	0.38 J	0.82	0.638	0.675	0.802	0.23 U	2 UJ	0.543	0.648	0.865
Bis(2-ethylhexyl)phthalate	117-81-7	µg/L	48	32	66.7	0.37 J	10	2.77	1.75	8.14	0.19 UJ	10	2.07	0.985	7.97

Table 4.4-4. LWG Summary Statistics for Sediment Trap and Stormwater Based on Land Use Type.

Analyte	CAS RN	Units	N	N Detected	% Detected	Detected Concentrations					Detected and Nondetected Concentrations				
						Minimum ^a	Maximum ^a	Mean	Median ^b	95th ^b	Minimum (full DL) ^a	Maximum (full DL) ^a	Mean (half DL)	Median (half DL) ^b	95th (half DL) ^b
Light Industrial															
Solid															
Metals															
Arsenic	7440-38-2	mg/kg	2	2	100	3.39	4.43	3.91	3.91	4.38	3.39	4.43	3.91	3.91	4.38
Chromium	7440-47-3	mg/kg	2	2	100	122 J	160 J	141	141	158	122 J	160 J	141	141	158
Copper	7440-50-8	mg/kg	2	2	100	65.8	68	66.9	66.9	67.9	65.8	68	66.9	66.9	67.9
Zinc	7440-66-6	mg/kg	2	2	100	442	517	480	480	513	442	517	480	480	513
PCBs ^c															
Total PCBs	TOTPCBS	µg/kg	2	2	100	264	661	463	463	641	264	661	463	463	641
Pesticides															
Aldrin	309-00-2	µg/kg	1	1	100	6.2 J	6.2 J	6.2	6.2	--	6.2 J	6.2 J	6.2	6.2	--
Dieldrin	60-57-1	µg/kg	1	0	0	--	--	--	--	--	29 UJ	29 UJ	14.5	14.5	--
Total Chlordanes	TOTCHLDANE	µg/kg	1	1	100	6.8 JT	6.8 JT	6.8	6.8	--	6.8 JT	6.8 JT	6.8	6.8	--
Total DDx	E966176	µg/kg	1	1	100	34 JT	34 JT	34	34	--	34 JT	34 JT	34	34	--
Polycyclic Aromatic Hydrocarbons															
Total PAHs	130498-29-2	µg/kg	2	2	100	20000 T	27000 T	23500	23500	26700	20000 T	27000 T	23500	23500	26700
Phthalates															
Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	2	2	100	17000	28000	22500	22500	27500	17000	28000	22500	22500	27500
Water															
Metals															
Arsenic (dissolved)	7440-38-2	µg/L	14	14	100	0.08	0.34	0.189	0.182	0.324	0.08	0.34	0.189	0.182	0.324
Arsenic	7440-38-2	µg/L	20	20	100	0.13	2.27	0.789	0.754	1.87	0.13	2.27	0.789	0.754	1.87
Chromium (dissolved)	7440-47-3	µg/L	14	12	85.7	0.24	1.76	0.804	0.67	1.72	0.24	1.76	0.714	0.57	1.71
Chromium	7440-47-3	µg/L	20	20	100	1.39	12.7	4.18	2.88	10.3	1.39	12.7	4.18	2.88	10.3
Copper (dissolved)	7440-50-8	µg/L	14	14	100	1.7	8.4	4.54	4.5	7.22	1.7	8.4	4.54	4.5	7.22
Copper	7440-50-8	µg/L	20	20	100	2.92	22.9	11.5	9.09	22.2	2.92	22.9	11.5	9.09	22.2
Zinc (dissolved)	7440-66-6	µg/L	14	14	100	15.4	88.8	40.8	34	85.4	15.4	88.8	40.8	34	85.4
Zinc	7440-66-6	µg/L	20	20	100	28.9	227	108	91.9	217	28.9	227	108	91.9	217
PCBs ^c															
Total PCBs (dissolved)	TOTPCBS	µg/L	5	5	100	0.000569	0.002	0.00121	0.00121	0.00186	0.000569	0.002	0.00121	0.00121	0.00186
Total PCBs	TOTPCBS	µg/L	20	20	100	0.0017 JT	0.594 J	0.0734	0.0136	0.382	0.0017 JT	0.594 J	0.0734	0.0136	0.382
Pesticides															
Aldrin (dissolved)	309-00-2	µg/L	3	0	0	--	--	--	--	--	0.00066 UJ	0.0055 U	0.00114	0.00034	0.00251
Aldrin	309-00-2	µg/L	6	0	0	--	--	--	--	--	0.00049 U	0.0088 U	0.00124	0.000318	0.00378
Dieldrin (dissolved)	60-57-1	µg/L	3	0	0	--	--	--	--	--	0.00048 U	0.0055 U	0.00113	0.000395	0.00251
Dieldrin	60-57-1	µg/L	6	0	0	--	--	--	--	--	0.00049 UJ	0.0088 U	0.00129	0.000925	0.00355
Total Chlordanes (dissolved)	TOTCHLDANE	µg/L	3	2	66.7	0.0007 T	0.0029 JT	0.0018	0.0018	0.00279	0.0007 T	0.0029 JT	0.00145	0.00075	0.00269
Total Chlordanes	TOTCHLDANE	µg/L	6	4	66.7	0.0012 JT	0.0052 JT	0.00235	0.0015	0.00466	0.0012 JT	0.0073 UT	0.00232	0.0015	0.00481
Total DDx (dissolved)	E966176	µg/L	3	0	0	--	--	--	--	--	0.0021 UJT	0.013 UJT	0.0031	0.00175	0.00603
Total DDx	E966176	µg/L	6	2	33.3	0.0071 JT	0.031 JT	0.0191	0.0191	0.0298	0.0011 UT	0.031 JT	0.00774	0.0036	0.025
Polycyclic Aromatic Hydrocarbons															
Total PAHs (dissolved)	130498-29-2	µg/L	7	7	100	0.06 JT	0.57 JT	0.326	0.35	0.543	0.06 JT	0.57 JT	0.326	0.35	0.543
Total PAHs	130498-29-2	µg/L	17	17	100	0.25 T	1.6 T	0.696	0.46	1.6	0.25 T	1.6 T	0.696	0.46	1.6
Phthalates															
Bis(2-ethylhexyl)phthalate (dissolved)	117-81-7	µg/L	2	2	100	0.17 J	0.18 J	0.175	0.175	0.18	0.17 J	0.18 J	0.175	0.175	0.18
Bis(2-ethylhexyl)phthalate	117-81-7	µg/L	14	14	100	1 J	4.2 J	1.93	1.6	4.14	1 J	4.2 J	1.93	1.6	4.14

Table 4.4-4. LWG Summary Statistics for Sediment Trap and Stormwater Based on Land Use Type.

Analyte	CAS RN	Units	N	N Detected	% Detected	Detected Concentrations					Detected and Nondetected Concentrations				
						Minimum ^a	Maximum ^a	Mean	Median ^b	95th ^b	Minimum (full DL) ^a	Maximum (full DL) ^a	Mean (half DL)	Median (half DL) ^b	95th (half DL) ^b
Major Transportation															
Solid															
Metals															
Arsenic	7440-38-2	mg/kg	1	1	100	3.37	3.37	3.37	3.37	--	3.37	3.37	3.37	3.37	--
Chromium	7440-47-3	mg/kg	1	1	100	52.8	52.8	52.8	52.8	--	52.8	52.8	52.8	52.8	--
Copper	7440-50-8	mg/kg	1	1	100	148	148	148	148	--	148	148	148	148	--
Zinc	7440-66-6	mg/kg	1	1	100	799	799	799	799	--	799	799	799	799	--
PCBs ^c															
Total PCBs	TOTPCBS	µg/kg	3	3	100	125 JT	223 JT	163	142	215	125 JT	223 JT	163	142	215
Pesticides															
Aldrin	309-00-2	µg/kg	2	0	0	--	--	--	--	--	1.1 U	2.5 U	0.9	0.9	1.22
Dieldrin	60-57-1	µg/kg	2	0	0	--	--	--	--	--	4 U	4.1 U	2.03	2.03	2.05
Total Chlordanes	TOTCHLDANE	µg/kg	2	1	50	8.8 JT	8.8 JT	8.8	8.8	--	4.5 UT	8.8 JT	5.53	5.53	8.47
Total DDx	E966176	µg/kg	2	2	100	3.4 JT	17 JT	10.2	10.2	16.3	3.4 JT	17 JT	10.2	10.2	16.3
Polycyclic Aromatic Hydrocarbons															
Total PAHs	130498-29-2	µg/kg	2	2	100	8800 JT	11000 JT	9900	9900	10900	8800 JT	11000 JT	9900	9900	10900
Phthalates															
Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	2	2	100	19000	39000	29000	29000	38000	19000	39000	29000	29000	38000
Water															
Metals															
Arsenic (dissolved)	7440-38-2	µg/L	10	10	100	0.23	1.58	0.687	0.597	1.48	0.23	1.58	0.687	0.597	1.48
Arsenic	7440-38-2	µg/L	13	13	100	0.52	2.33	1.15	0.982	2.02	0.52	2.33	1.15	0.982	2.02
Chromium (dissolved)	7440-47-3	µg/L	10	8	80	0.7	5.52	1.96	1.62	4.38	0.7	5.52	1.66	1.28	4.05
Chromium	7440-47-3	µg/L	14	14	100	4.99	28.2	10.5	8.31	22	4.99	28.2	10.5	8.31	22
Copper (dissolved)	7440-50-8	µg/L	10	10	100	4.2	24.8	11.7	9.82	22	4.2	24.8	11.7	9.82	22
Copper	7440-50-8	µg/L	14	14	100	24.6	66	42.9	37.6	65.4	24.6	66	42.9	37.6	65.4
Zinc (dissolved)	7440-66-6	µg/L	10	10	100	39.1	525	118	64.5	375	39.1	525	118	64.5	375
Zinc	7440-66-6	µg/L	14	14	100	113	1140	364	254	871	113	1140	364	254	871
PCBs ^c															
Total PCBs (dissolved)	TOTPCBS	µg/L	1	1	100	0.00407 JT	0.00407 JT	0.00407	0.00407	--	0.00407 JT	0.00407 JT	0.00407	0.00407	--
Total PCBs	TOTPCBS	µg/L	11	11	100	0.0085 T	0.185 JT	0.0517	0.0395	0.135	0.0085 T	0.185 JT	0.0517	0.0395	0.135
Polycyclic Aromatic Hydrocarbons															
Total PAHs (dissolved)	130498-29-2	µg/L	1	1	100	0.12 JT	0.12 JT	0.12	0.12		0.12 JT	0.12 JT	0.12	0.12	
Total PAHs	130498-29-2	µg/L	12	12	100	0.9 JT	12 T	2.96	2.35	7.32	0.9 JT	12 T	2.96	2.35	7.32
Phthalates															
Bis(2-ethylhexyl)phthalate (dissolved)	117-81-7	µg/L	1	1	100	1.8 J	1.8 J	1.8	1.8	--	1.8 J	1.8 J	1.8	1.8	--
Bis(2-ethylhexyl)phthalate	117-81-7	µg/L	4	4	100	2.6	17	9.95	10.1	16.1	2.6	17	9.95	10.1	16.1
Multiple Land Uses															
Solid															
Metals															
Arsenic	7440-38-2	mg/kg	5	5	100	2.36	5.6	3.37	2.89	5.19	2.36	5.6	3.37	2.89	5.19
Chromium	7440-47-3	mg/kg	5	5	100	22.5	74.3	40.2	37.5	67.6	22.5	74.3	40.2	37.5	67.6
Copper	7440-50-8	mg/kg	5	5	100	32.3	164	64.3	38	141	32.3	164	64.3	38	141
Zinc	7440-66-6	mg/kg	5	5	100	229	1020	556	289	1010	229	1020	556	289	1010
PCBs ^c															
Total PCBs	TOTPCBS	µg/kg	7	7	100	74.5 JT	696 JT	232	140	578	74.5 JT	696 JT	232	140	578

Table 4.4-4. LWG Summary Statistics for Sediment Trap and Stormwater Based on Land Use Type.

Analyte	CAS RN	Units	N	N Detected	% Detected	Detected Concentrations					Detected and Nondetected Concentrations				
						Minimum ^a	Maximum ^a	Mean	Median ^b	95th ^b	Minimum (full DL) ^a	Maximum (full DL) ^a	Mean (half DL)	Median (half DL) ^b	95th (half DL) ^b
Pesticides															
Aldrin	309-00-2	µg/kg	6	3	50	2.5	21 J	9.27	4.3	19.3	0.78 U	21 J	5.25	2.28	16.8
Dieldrin	60-57-1	µg/kg	6	4	66.7	1.3 J	3.6	2.6	2.75	3.5	1.3 J	13 U	3.16	2.75	5.78
Total Chlordanes	TOTCHLDANE	µg/kg	6	6	100	11 JT	94 JT	32.2	21.5	78.8	11 JT	94 JT	32.2	21.5	78.8
Total DDx	E966176	µg/kg	6	6	100	6.3 JT	180 JT	55.6	39.5	147	6.3 JT	180 JT	55.6	39.5	147
Polycyclic Aromatic Hydrocarbons															
Total PAHs	130498-29-2	µg/kg	6	6	100	520 JT	19000 JT	7350	3500	18000	520 JT	19000 JT	7350	3500	18000
Phthalates															
Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	6	6	100	890 J	27000	9830	4450	25300	890 J	27000	9830	4450	25300
Water															
Metals															
Arsenic (dissolved)	7440-38-2	µg/L	11	11	100	0.305	1.37 J	0.744	0.449	1.37	0.305	1.37 J	0.744	0.449	1.37
Arsenic	7440-38-2	µg/L	15	15	100	0.49	2.22	1.39	1.44	2.21	0.49	2.22	1.39	1.44	2.21
Chromium (dissolved)	7440-47-3	µg/L	11	7	63.6	0.48	1.18	0.739	0.67	1.15	0.48	1.18	0.588	0.49	1.13
Chromium	7440-47-3	µg/L	15	15	100	2.84	11.6	7.34	6.41	11.5	2.84	11.6	7.34	6.41	11.5
Copper (dissolved)	7440-50-8	µg/L	11	11	100	2.88	12.7	6.67	6.87	11.8	2.88	12.7	6.67	6.87	11.8
Copper	7440-50-8	µg/L	15	15	100	10.3	55.6	26.6	24.3	48.7	10.3	55.6	26.6	24.3	48.7
Zinc (dissolved)	7440-66-6	µg/L	11	10	90.9	49.8	115	74.2	70.1	105	49.6 U	115	69.7	61.4	104
Zinc	7440-66-6	µg/L	15	15	100	83.6	391	217	220	387	83.6	391	217	220	387
PCBs ^c															
Total PCBs (dissolved)	TOTPCBS	µg/L	1	1	100	0.000661 JT	0.000661 JT	0.000661	0.000661	--	0.000661 JT	0.000661 JT	0.000661	0.000661	--
Total PCBs	TOTPCBS	µg/L	12	12	100	0.00949 JT	0.503 T	0.0836	0.0231	0.295	0.00949 JT	0.503 T	0.0836	0.0231	0.295
Polycyclic Aromatic Hydrocarbons															
Total PAHs (dissolved)	130498-29-2	µg/L	1	1	100	0.014 JT	0.014 JT	0.014	0.014		0.014 JT	0.014 JT	0.014	0.014	
Total PAHs	130498-29-2	µg/L	12	12	100	0.083 JT	2.6 JT	0.986	0.865	2.22	0.083 JT	2.6 JT	0.986	0.865	2.22
Phthalates															
Bis(2-ethylhexyl)phthalate (dissolved)	117-81-7	µg/L	1	0	0	--	--	--	--	--	0.44 U	0.44 U	0.22	0.22	--
Bis(2-ethylhexyl)phthalate	117-81-7	µg/L	4	4	100	1.8 J	8.9	5.03	4.7	8.41	1.8 J	8.9	5.03	4.7	8.41
Open Space															
Solid															
Metals															
Arsenic	7440-38-2	mg/kg	1	1	100	1.5	1.5	1.5	1.5	--	1.5	1.5	1.5	1.5	--
Chromium	7440-47-3	mg/kg	1	1	100	17.9	17.9	17.9	17.9	--	17.9	17.9	17.9	17.9	--
Copper	7440-50-8	mg/kg	1	1	100	12.2	12.2	12.2	12.2	--	12.2	12.2	12.2	12.2	--
Zinc	7440-66-6	mg/kg	1	1	100	48.9 J	48.9 J	48.9	48.9	--	48.9 J	48.9 J	48.9	48.9	--
PCBs ^c															
Total PCBs	TOTPCBS	µg/kg	1	1	100	4.13 JT	4.13 JT	4.13	4.13	--	4.13 JT	4.13 JT	4.13	4.13	--
Pesticides															
Aldrin	309-00-2	µg/kg	1	0	0	--	--	--	--	--	0.24 U	0.24 U	0.12	0.12	--
Dieldrin	60-57-1	µg/kg	1	0	0	--	--	--	--	--	0.4 U	0.4 U	0.2	0.2	--
Total Chlordanes	TOTCHLDANE	µg/kg	1	0	0	--	--	--	--	--	0.4 UT	0.4 UT	0.2	0.2	--
Total DDx	E966176	µg/kg	1	1	100	3.9 JT	3.9 JT	3.9	3.9	--	3.9 JT	3.9 JT	3.9	3.9	--
Polycyclic Aromatic Hydrocarbons															
Total PAHs	130498-29-2	µg/kg	1	1	100	300 JT	300 JT	300	300		300 JT	300 JT	300	300	
Phthalates															
Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	1	0	0	--	--	--	--	--	30 U	30 U	15	15	--

Table 4.4-4. LWG Summary Statistics for Sediment Trap and Stormwater Based on Land Use Type.

Analyte	CAS RN	Units	N	N Detected	% Detected	Detected Concentrations					Detected and Nondetected Concentrations				
						Minimum ^a	Maximum ^a	Mean	Median ^b	95th ^b	Minimum (full DL) ^a	Maximum (full DL) ^a	Mean (half DL)	Median (half DL) ^b	95th (half DL) ^b
Water															
Metals															
Arsenic (dissolved)	7440-38-2	µg/L	2	2	100	0.124 J	0.138	0.131	0.131	0.137	0.124 J	0.138	0.131	0.131	0.137
Arsenic	7440-38-2	µg/L	3	3	100	0.196	0.228 J	0.209	0.202	0.225	0.196	0.228 J	0.209	0.202	0.225
Chromium (dissolved)	7440-47-3	µg/L	2	2	100	0.54	0.76	0.65	0.65	0.749	0.54	0.76	0.65	0.65	0.749
Chromium	7440-47-3	µg/L	3	3	100	0.87	3.05	1.71	1.22	2.87	0.87	3.05	1.71	1.22	2.87
Copper (dissolved)	7440-50-8	µg/L	2	2	100	0.74 J	1.23	0.985	0.985	1.21	0.74 J	1.23	0.985	0.985	1.21
Copper	7440-50-8	µg/L	3	3	100	1.01 J	3.07	1.75	1.16	2.88	1.01 J	3.07	1.75	1.16	2.88
Zinc (dissolved)	7440-66-6	µg/L	2	2	100	3.96	12.3 J	8.13	8.13	11.9	3.96	12.3 J	8.13	8.13	11.9
Zinc	7440-66-6	µg/L	3	3	100	3.69 J	13.1 J	8.46	8.59	12.6	3.69 J	13.1 J	8.46	8.59	12.6
PCBs ^c															
Total PCBs	TOTPCBS	µg/L	5	3	60	0.0000808 JT	0.000641 JT	0.00031	0.000208	0.000598	0.0000524 UT	0.000641 JT	0.000197	0.0000808	0.000554
Polycyclic Aromatic Hydrocarbons															
Total PAHs	130498-29-2	µg/L	5	1	20	0.02 JT	0.02 JT	0.02	0.02		0.015 UA	0.02 JT	0.0105	0.0085	0.0177
Phthalates															
Bis(2-ethylhexyl)phthalate	117-81-7	µg/L	5	1	20	0.83 J	0.83 J	0.83	0.83	--	0.071 U	0.83 J	0.206	0.055	0.677
Residential															
Solid															
Metals															
Arsenic	7440-38-2	mg/kg	2	2	100	2.38 T	8.69	5.54	5.54	8.37	2.38 T	8.69	5.54	5.54	8.37
Chromium	7440-47-3	mg/kg	2	2	100	29.2 JT	71.8	50.5	50.5	69.7	29.2 JT	71.8	50.5	50.5	69.7
Copper	7440-50-8	mg/kg	2	2	100	49.6 T	128	88.8	88.8	124	49.6 T	128	88.8	88.8	124
Zinc	7440-66-6	mg/kg	2	2	100	334 T	856	595	595	830	334 T	856	595	595	830
PCBs ^c															
Total PCBs	TOTPCBS	µg/kg	2	2	100	66.7 JT	377	222	222	361	66.7 JT	377	222	222	361
Pesticides															
Aldrin	309-00-2	µg/kg	3	0	0	--	--	--	--	--	0.22 U	40 U	11.9	15.5	19.6
Dieldrin	60-57-1	µg/kg	3	1	33.3	4 NJ	4 NJ	4	4		4 NJ	31 UT	8.17	5	14.5
Total Chlordanes	TOTCHLDANE	µg/kg	3	2	66.7	9.1 JT	22 JT	15.6	15.6	21.4	9.1 JT	29 UT	15.2	14.5	21.3
Total DDx	E966176	µg/kg	3	2	66.7	36 JT	260 JT	148	148	249	36 JT	260 JT	115	48.5	239
Polycyclic Aromatic Hydrocarbons															
Total PAHs	130498-29-2	µg/kg	1	1	100	8200 JT	8200 JT	8200	8200		8200 JT	8200 JT	8200	8200	
Phthalates															
Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	1	1	100	8200 JT	8200 JT	8200	8200	--	8200 JT	8200 JT	8200	8200	--
Water															
Metals															
Arsenic (dissolved)	7440-38-2	µg/L	4	4	100	0.245	0.41	0.321	0.315	0.4	0.245	0.41	0.321	0.315	0.4
Arsenic	7440-38-2	µg/L	6	6	100	0.255	1.36	0.556	0.415	1.17	0.255	1.36	0.556	0.415	1.17
Chromium (dissolved)	7440-47-3	µg/L	4	3	75	0.28	0.73	0.53	0.58	0.715	0.28	0.73	0.481	0.458	0.708
Chromium	7440-47-3	µg/L	6	6	100	0.83	31.8	6.78	1.59	24.8	0.83	31.8	6.78	1.59	24.8
Copper (dissolved)	7440-50-8	µg/L	4	4	100	3.44	6.94	5.52	5.84	6.93	3.44	6.94	5.52	5.84	6.93
Copper	7440-50-8	µg/L	6	6	100	6.92	83.5	21.5	9.28	65.8	6.92	83.5	21.5	9.28	65.8
Zinc (dissolved)	7440-66-6	µg/L	4	4	100	19.6	69.1	35	25.7	63.4	19.6	69.1	35	25.7	63.4
Zinc	7440-66-6	µg/L	6	6	100	30.7	609	142	49.6	477	30.7	609	142	49.6	477
PCBs ^c															
Total PCBs (dissolved)	TOTPCBS	µg/L	1	1	100	0.00264	0.00264	0.00264	0.00264	--	0.00264	0.00264	0.00264	0.00264	--
Total PCBs	TOTPCBS	µg/L	6	6	100	0.00114 JT	0.134 J	0.0376	0.0118	0.117	0.00114 JT	0.134 J	0.0376	0.0118	0.117

Table 4.4-4. LWG Summary Statistics for Sediment Trap and Stormwater Based on Land Use Type.

Analyte	CAS RN	Units	N	N Detected	% Detected	Detected Concentrations					Detected and Nondetected Concentrations				
						Minimum ^a	Maximum ^a	Mean	Median ^b	95th ^b	Minimum (full DL) ^a	Maximum (full DL) ^a	Mean (half DL)	Median (half DL) ^b	95th (half DL) ^b
Pesticides															
Aldrin (dissolved)	309-00-2	µg/L	3	0	0	--	--	--	--	--	0.00073 UJ	0.0056 UJ	0.00136	0.0009	0.00261
Aldrin	309-00-2	µg/L	3	0	0	--	--	--	--	--	0.00077 UJ	0.0053 UJ	0.00125	0.0007	0.00246
Dieldrin (dissolved)	60-57-1	µg/L	3	0	0	--	--	--	--	--	0.00049 U	0.0056 U	0.00111	0.00027	0.00255
Dieldrin	60-57-1	µg/L	3	0	0	--	--	--	--	--	0.0005 U	0.0053 U	0.00115	0.00055	0.00244
Total Chlordanes (dissolved)	TOTCHLDANE	µg/L	3	1	33.3	0.0011 T	0.0011 T	0.0011	0.0011	--	0.0011 T	0.012 UT	0.00255	0.0011	0.00551
Total Chlordanes	TOTCHLDANE	µg/L	3	3	100	0.00054 T	0.0039 JT	0.00198	0.0015	0.00366	0.00054 T	0.0039 JT	0.00198	0.0015	0.00366
Total DDx (dissolved)	E966176	µg/L	3	0	0						0.0012 UJT	0.023 UJT	0.00443	0.0012	0.0105
Total DDx	E966176	µg/L	3	1	33.3	0.00081 T	0.00081 T	0.00081	0.00081	--	0.00081 T	0.011 UJT	0.0028	0.0021	0.00516
Polycyclic Aromatic Hydrocarbons															
Total PAHs (dissolved)	130498-29-2	µg/L	3	3	100	0.26 JT	0.45 JT	0.357	0.36	0.441	0.26 JT	0.45 JT	0.357	0.36	0.441
Total PAHs	130498-29-2	µg/L	7	7	100	0.074 JT	1.4 JT	0.445	0.1	1.19	0.074 JT	1.4 JT	0.445	0.1	1.19
Phthalates															
Bis(2-ethylhexyl)phthalate (dissolved)	117-81-7	µg/L	1	1	100	0.2 J	0.2 J	0.2	0.2	--	0.2 J	0.2 J	0.2	0.2	--
Bis(2-ethylhexyl)phthalate	117-81-7	µg/L	6	6	100	1	6.7	3.78	3.6	6.45	1	6.7	3.78	3.6	6.45

Notes:

- ^a Whenever several result values match maximum or minimum value, qualifier and descriptor preference has been given in the following order: U over J over A over N over T over no qualification.
- ^b Median is the exact result value ranking as the 0.50 percentile in an ascending list of all results, and 95th percentile is the exact result value of the 0.95 ranking result. When the ascending list of all results doesn't produce an exact match to the corresponding percentile rank, average of two adjacent results ranking closest to 0.50 percentile is the median, and an interpolated value is the 95th percentile. Such median or 95th percentile value is not qualified. It is qualified with "U" if both results ranking immediately above and below the corresponding percentile are "U" qualified, and with "J" if at least one of the results is "J" qualified.
- ^c Total PCBs are total PCB congeners whenever available, regardless of their qualification.

Reason codes for qualifiers:

- J - The associated numerical value is an estimated quantity.
- N - Presumptive evidence of presence of material; identification of the compound is not definitive.
- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation limit.

Reason codes for descriptors:

- T - The associated numerical value was mathematically derived (e.g., from summing multiple analyte results such as Aroclors, or calculating the average of multiple results for a single analyte). Also indicates all results that are selected for reporting in preference to other available results (e.g., for parameters reported by multiple methods) for the Round 2 data.

- data not available.
- DL - detection limit
- PCB - polychlorinated biphenyl
- PCDD/F - dioxin/furan

Table 4.4-5. Stormwater and Catch Basin
Investigations under the JSCS Program.

Survey Name	Survey ID	Included in Stats?	Study Objective	River Mile(s)	Begin Date	End Date	Number of Samples	Composite (Y/N)	QA Category	Conv.	Metals	SVOCs	PAH only	Phthalates Only	PCBs (Aroclors)	Pest.	VOCs	TPH-	TPH-	Other
												(includes PAH & Phthalates)						Gas	Diesel & Oil	
ABF Freight	WLCAFF07	Yes	Catch basin solids	9.1	6/4/2007	6/4/2007	2 Catch basin solids	N	Cat 1 QA 1 TOC & Pesticides Cat 2	X	X		X	X	X	X				X
Advanced American Construction Property	WLCAAE06	Yes	Stormwater sampling	5.6	5/26/2006	5/2/2007	3 Stormwaters	N	Cat 1 QA1 Some TPH data Cat 2		X		X					X	X	
Anderson Bros., Stormwater, March 2007	WLCABL06	Yes	Stormwater sampling	7.8, 7.9	12/26/2006	3/7/2007	4 Stormwaters	N	Cat 1 QA 1 VOCs Cat 2		X	X			X	X	X		X	
Ashland Chemical	WLCALF07	Yes	Catch basin solids	9.2	6/21/2007	6/21/2007	1 Catch basin solid	N	Cat 1 QA 1 TOC Cat 2	X	X		X	X	X	X				
Boydston Metal Works at Burgard Industrial Park	WLCBSA02	No, too old	Catch basin solids	4.2	1/28/2002	1/28/2002	1 Catch basin solid	N	Cat 1 QA 1		X		X				X	X	X	
Calbag Metals/Former ACME Supply and Trading Company	WLCCBA05	Yes	Stormwater and catch basin solids	8.3 - 8.5	1/4/2005	1/6/2005	7 Catch basin solids 10 Stormwaters	Y	Cat 1 QA1 Oil & Grease & some Aroclor & PAH data Cat 2	X	X	X			X			X	X	
Chapel Steel	WLCCSJ05	Yes	Catch basin solids	8.7	6/11/2007	6/11/2007	1 Catch basin solid	N	Cat 1 QA 1 Pesticides Cat 2	X	X		X	X	X	X				X
Christenson Oil	WLCCHK01	Yes	Stormwater and catch basin solids	8.8	11/19/2001	6/9/2007	1 Catch basin solid 6 Stormwaters	N	Mixture of Cat1 QA1 & Cat 2	X	X	X			X		X	X	X	
Consolidated Metco-Rivergate-Response	WLCCMJ04	Yes	Stormwater sampling	2.8 - 3	10/26/2004	4/10/2006	9 Stormwaters	N	Cat 1 QA 1	X	X									
Container Recovery	WLCCRL06	Yes	Catch basin solids	8.9 - 9	6/5/2007	6/5/2007	2 Catch basin solids	N	Cat 1 QA 1 Pesticides Cat 2	X	X		X	X	X	X				X
Fred Devine Diving & Salvage, Inc.	WLCFDB01	No, too old	Stormwater and catch basin solids	8.2 - 8.4	2/21/2002	4/30/2002	4 Catch basin solids 1 Stormwater	N	Cat 2	X	X	X			X					
Freightliner Truck Manufacturing	WLCFLL06	Yes	Stormwater and catch basin solids	9.3	12/20/2006	6/5/2007	2 Catch basin solids 6 Stormwaters	Y	Cat 1 QA 1	X	X		X	X	X					
Galvanizers Company	WLCGLC07	Yes	Stormwater and catch basin solids	9.7	11/2/2006	6/24/2007	3 Catch basin solids 17 Stormwaters	N	Cat 1 QA 1 Grain size & some PAH Cat 2	X	X		X	X	X					
Stormwater-PGE-Forest Park	WLCGFE06	Yes	Source tracing	8.4 - 8.5	5/2/2006	10/11/2006	15 In-line solids	N	Cat 1 QA 1						X	X				
Linnton Plywood Association	WLCLPJ01	No, too old	Catch basin solids	4.5 - 4.6	10/16/2001	10/16/2001	4 Catch basin solids	N	Cat 2		X	X			X		X	X	X	
McCall Oil, RI, July 2004	WLCMOL00	Yes	Stormwater and catch basin solids	7.8 - 7.9	12/15/2000	5/2/2007	6 Catch basin solids 19 Stormwaters	N	Mixture of Cat1 QA1 & Cat 2	X	X	X			X			X	X	
Northwest Pipe Company	WLCNPI03	No, too old and Cat2	Stormwater source control efforts	3.9 - 4.3	9/9/2003	7/8/2005	8 Stormwaters	N	2003 PCBs, metals, TSS, & oil & grease Cat 1 QA 1 All else Cat 2	X	X		X		X			X		
Zidell Property at 5200 NW Front Avenue	WLCZDJ89	No, too old	One drain sediment	8.1	10/2/1989	10/2/1989	1 Catch basin solid	N	Metals Cat 1 QA1 Aroclors & TPH Cat2		X				X			X	X	
Oregon Steel Mill	WLCOSJ96	No, too old	Stormwater and catch basin solids	2 - 2.4	10/14/1996	10/23/2002	23 Catch basin solids 17 Stormwaters	N	CBSO Cat 1 QA2 Waters Cat 1 QA1	X	X	X			X		X	X	X	

Table 4.4-5. Stormwater and Catch Basin
Investigations under the JSCS Program.

Survey Name	Survey ID	Included in Stats?	Study Objective	River Mile(s)	Begin Date	End Date	Number of Samples	Composite (Y/N)	QA Category	Conv.	Metals	SVOCs (includes PAH & Phthalates)	PAH only	Phthalates Only	PCBs (Aroclors)	Pest.	VOCs	TPH- Gas	TPH- Diesel & Oil	Other
Owens Corning Linnton Site	WLCOLB01	Yes	Stormwater and catch basin solids	3.6 - 3.8	2/2/2001	7/18/2007	2 Catch basin solids 13 Stormwaters	N	Cat 1 QA1 oil & grease & some pH Cat2	X	X		X	X	X			X	X	
Carson Oil	WLCCOF07	Yes	Catch basin solids	9.2	6/7/2007	6/7/2007	2 Catch basin solids	N	Cat 1 QA 1 TOC & pesticides Cat 2	X	X		X	X	X	X				X
Owens-Corning, 3750 N.W. Yeon Avenue	WLCOCF07	Yes	Catch basin solids	9.1	6/15/2007	6/15/2007	1 Catch basin solid	N	Cat 1 QA 1 Pesticides Cat 2	X	X		X	X	X	X				X
Paco / Sulzer Pumps	WLCPPF07	Yes	Stormwater and catch basin solids	9.6 - 10.4	1/28/2004	6/20/2007	23 Catch basin solids 16 Stormwaters	Y	Mixture of Cat1 QA1 & Cat 2	X	X	X			X				X	
USCG catch basin sampling	WLCCGD06	Yes	Stormwater and catch basin solids	8 - 8.1	4/14/2006	6/1/2006	14 Catch basin solids 18 Stormwaters	N	Cat 1 QA 1 SVOC & some VOC Cat 2	X	X	X			X			X	X	X
UPRR Albina	WLCAYH00	No, too old	XPA stormwater and catch basin data	9.9 - 10.8	8/9/2000	8/17/000	4 Catch basin solids 9 Stormwaters	N	Mixture of Cat1 QA1 & Cat 2		X	X			X	X	X	X	X	
GE 2007 stormwater outfall monitoring	WLCGED07	Yes	Stormwater sampling	9.6	4/12/2007	6/10/2007	16 Stormwaters	Y	Cat 1 QA2	X	X		X	X	X				X	X
City Outfall Basin 19 Inline Solids Sampling at the Former Calbag Metals	WLCOFJ02	Yes	Source tracing	8.3	6/18/2007	6/18/2007	1 Sediment trap	N	QA1Cat1						X					
City Outfall Basin 22B Inline Solids Evaluation	WLCOFJ02	Yes	Source tracing	6.9	9/30/2003	11/8/2006	4 In-line solids	Y	NWTPH-Dx & PAH data Cat 1 QA1 All other data Cat 2	X	X	X			X	X	X	X	X	X
City Outfall Basin 22C Northwest Drainage Pond Evaluation	WLCOFJ02	No, Cat2	Source tracing	6.7 - 6.8	11/24/2003	12/19/2003	4 Soils	N	Cat 2		X	X				X	X	X	X	X
City Outfall Basin 22C, Inline Solids Sampling in the Vicinity of Kopp	WLCOFJ02	Yes	Source tracing	6.3 - 6.4	11/5/2003	9/11/2006	7 In-line solids	Y	Cat1 QA1 Some Cat 2 data	X	X	X			X			X	X	
City Outfall Basin 46 Inline Solids Sampling in the Vicinity of the Union Pacific Railroad Albina Yard	WLCOFJ02	Yes	Source tracing	10.4 - 10.7	8/9/2000	8/2/2005	5 In-line solids	N	QA1Cat1	X	X	X			X			X	X	
City Outfall Basin 47 Inline Solids Sampling	WLCOFJ02	Yes	Source tracing	9.8 - 9.9	6/28/2006	6/28/2006	4 In-line solids	N	Cat 1 QA1 Grain size Cat 2	X					X					
City Outfall Basin 48 Inline Solids Sampling	WLCOFJ02	Yes	Source tracing	7.2	6/20/2006	6/20/2006	1 In-line solid	N	Cat 1 QA1 Grain size & metals Cat 2	X	X		X	X	X	X				
City Outfall Basin 49 Inline Solids Sampling and Basin Priority Reassessment	WLCOFJ02	Yes	Source tracing	6.3 - 6.4	7/25/2005	7/25/2005	2 In-line solids	N	Cat 1 QA1		X									
City Outfall Basin 52A Catch Basin Solids Sampling Adjacent to Mar Com	WLCOFJ02	Yes	Source tracing	5.5 - 5.6	7/25/2005	7/25/2005	2 In-line solids	N	Cat 1 QA1 Metals Cat 2		X	X			X			X	X	
City Outfall Basin M-2 Dry-Weather Flow Sampling	WLCOFJ02	No, Cat2	Source tracing	8.8	9/19/2002	8/3/2005	4 Waters	N	Cat 2		X									
City Outfall Basin M-3 Dry-Weather Flow Sampling	WLCOFJ02	No, Cat2	Source tracing	9.1 - 9.3	9/19/2002	9/1/2005	5 Waters	N	Cat 2		X									

Table 4.4-5. Stormwater and Catch Basin Investigations under the JSCS Program.

Survey Name	Survey ID	Included in Stats?	Study Objective	River Mile(s)	Begin Date	End Date	Number of Samples	Composite (Y/N)	QA Category	Conv.	Metals	SVOCs (includes PAH & Phthalates)				PAH only	Phthalates Only	PCBs (Aroclors)	Pest.	VOCs	TPH-	TPH-	Other
												Gas	Diesel & Oil										
City Outfall Basin S-5 Inline Solids Sampling	WLCOFJ02	Yes	Source tracing	9 - 9.3	7/26/2005	7/26/2005	2 In-line solids	N	Cat 1 QA1 Phthalates & metals Cat 2		X				X	X							
City Outfall Basin S-6 Inline Solids Sampling	WLCOFJ02	Yes	Source tracing	8.4 - 8.6	6/20/2006	7/19/2006	4 In-line solids	N	Cat 1 QA1 Grain size & metals Cat 2	X	X				X	X	X						
Basin 19 Stormwater sampling	WLCOFJ02	Yes	Source tracing	8.3	3/8/2006	2/14/2007	8 Waters	Y	All 8082 data QA1Cat1 8270 data, except FY05/06 Event 3 data QA1Cat1 All else Cat 2 Will probably need reports to determine which 8270 data is Cat 1/2	X	X		X				X						
Basin 53 Stormwater sampling	WLCOFJ02	Yes	Source tracing	5.1	1/25/2008	3/13/2008	3 Composite waters plus one duplicate	Y	8270 & TOC data Cat 1 1 QA 1 All else Cat 2	X	X		X				X					X	
Port of Portland Terminal 1 North Catch Basin Solids Data	WLCOFJ02	Yes	Source tracing	10.5 - 10.6	5/18/2007	5/18/2007	2 Catch basin solids	N	SVOC Cat 1 QA 1 All other data Cat 2	X	X		X				X						
Siltronic catch basin and stormwater - June 2001, Nov 2006, Feb 2007	WLCSLF01	Yes	Stormwaters and 1 catch basin solid	6.4 - 6.7	6/19/2001	2/14/2007	9 Stormwaters 1 Catch basin solid	Y	TOC & Metals Cat 1 QA 1 All other data Cat 2	X	X			X	X	X		X			X		
Gunderson Outfall Effluent and Seep Monitoring (additional data)	WLCGND05	Yes	Outfall and seep monitoring	8.5 - 9.1	1/28/1999	2/16/2007	55 Waters 132 Catch basin solids	N	Cat 1 QA1		X			X	X	X		X	X	X	X		
T4 Spring 2007 outfall monitoring	WLCT4C07	Yes	Stormwater sampling	4.2 - 5.1	3/24/2007	5/20/2007	29 Stormwaters from 7 locations	N	Cat 1 QA 1 except 1668 data which is Cat 2	X	X			X	X	X	X				X		
City of Portland 1200Z TSS monitoring data	WLC1200Z	No, Cat2	Outfall monitoring	2.1 - 10.8	05/21/1993	11/16/2007	777 Samples from 71 locations	N	Cat 2	X													
Chevron Willbridge Distribution Center catch basin monitoring	WLCCWK06	Yes	Catch basin solids	7.6 - 7.7	11/16/2006	11/21/2006	5 Catch basin solids	Y	Cat 1 QA 1 except 8081 data which is Cat 2	X	X		X				X	X	X				
Former Chevron Willbridge Asphalt Plant Catch Basin	WLCCAI06	Yes	Catch basin monitoring	7.8 - 8.1	9/5/2006	2/22/2007	2 Stormwaters, 7 catch basin solids, & 2 in-line solids	Y	Catch Basins Cat 2 Waters Cat 1 QA1	X	X		X	X	X	X	X	X	X	X			
Kinder Morgan Linnton catch basin (10/06) and stormwater (2007)	WLCKLJ06	Yes	Catch basin and stormwater monitoring	4.0 - 4.2	10/12/2006	10/24/2007	3 Waters 5 Catch basin solids	N	CBSO 8270 (PAH & phthalates) Cat 2 All else Cat1 QA 1	X	X			X	X	X		X	X	X			
Kinder Morgan Willbridge stormwater and catch basin - May 2007	WLCKWE07	Yes	Catch basin and stormwater monitoring	7.4 - 7.5	5/11/2007	11/13/2007	4 Waters 3 Catch basin solids	N	Grain size & 8270 Cat 2 All else Cat 1 QA 1		X			X	X	X	X	X	X	X			
2005 stormwater sampling at the Arco/BP site	WLCARD05	Yes	Source control	4.8 - 4.9	4/25/2005	7/28/2005	2 Waters 3 Catch basin solids	N	Cat 1 QA1 Except Water TPH-G & -D data which is Cat 2		X			X				X	X	X			

Table 4.4-5. Stormwater and Catch Basin Investigations under the JSCS Program.

Survey Name	Survey ID	Included in Stats?	Study Objective	River Mile(s)	Begin Date	End Date	Number of Samples	Composite (Y/N)	QA Category	Conv.	Metals	SVOCs (includes PAH & Phthalates)		PAH only	Phthalates Only	PCBs (Aroclors)	Pest.	VOCs	TPH- Diesel & Oil		Other
Arkema Stormwater February 15, 2007	C250-0101_WO1	Yes	Stormwater monitoring	7.1 - 7.3	2/15/2007	2/15/2007	4 Stormwaters	N	QA2Cat1	X	X			X			X				
Arkema Stormwater March 2, 2007	C250-0101_WO2	Yes	Stormwater monitoring	7.1 - 7.3	3/2/2007	3/2/2007	4 Stormwaters	N	QA1Cat1	X	X			X			X				
Arkema Stormwater March 19, 2007	C250-0101_WO3	Yes	Stormwater monitoring	7.1 - 7.3	3/19/2007	3/19/2007	4 Stormwaters	N	QA1Cat1	X	X			X			X				
Arkema Stormwater June 5, 2007	C250-0101_WO4	Yes	Stormwater monitoring	7.1 - 7.3	6/5/2007	6/5/2007	2 Stormwaters	N	QA1Cat1	X	X			X			X				
Arkema Stormwater August 14, 2007	C250-0101_WO5	No, missing XY	Stormwater monitoring	7.1 - 7.3	8/14/2007	8/14/2007	1 Stormwater	N	QA1Cat1	X	X			X			X	X			X
Rhône-Poulenc Outfalls 22B and 22C Effluent	WLCRPI04	Yes	Stormwater monitoring	6.8 - 6.9	10/1/1993	9/23/2004	2 Stormwaters	N	QA2Cat1, except diesel & oil: QA2Cat2	X	X	X					X	X		X	
Willbridge Terminals Catch Basin Solids for Stormwater Source Control	WLCWTI07	Yes	Source control	7.7	9/24/2007	9/26/2007	12 Catch basin solids	N	Cat1	X	X	X				X	X	X	X	X	

Table 4.4-5. Stormwater and Catch Basin Investigations under the JSCS Program.

Survey Name	Comment	Reference ^a	Phase Code
ABF Freight	Conventional: TOC, Grain Size. Herbicides also analyzed	Oregon Department of Environmental Quality ABF Freight Site Discovery file	ODEQ0005
Advanced American Construction Property		MFA, 2007	MFA0006
Anderson Bros., Stormwater, March 2007		Wohlers Environmental Services, Inc., 2007	WOH0003
Ashland Chemical	Conventional: TOC, Grain Size. Herbicides also analyzed	Oregon Department of Environmental Quality Ashland Chemical Site Discovery file	ODEQ0006
Boydston Metal Works at Burgard Industrial Park	VOC limited to PCE & breakdown product.	Bridgewater Group, Inc. 2002	BGI0001
Calbag Metals/Former ACME Supply and Trading Company	Some samples composited, not all. Conventional: pH, TSS, oil & grease TPH results from NWTPH-HCID	Creekside Environmental Consulting, LLC. 2005, 2006	CEC0001, CEC0002
Chapel Steel	Conventional: TOC. Herbicides also analyzed	Oregon Department of Environmental Quality Chapel Steel Site Discovery file	ODEQ0008
Christenson Oil	Conventional: pH, TSS, Oil & Grease	Wohlers Environmental Services, Inc. 2007	WOH0001, WOH0002
Consolidated Metco-Rivergate-Response	Conventional: pH, TSS, Oil & Grease Metals: Cu, Pb, Zn only	Kennedy/Jenks Consultants, 2007	KJC0003
Container Recovery	Conventional: TOC, Grain Size. Herbicides also analyzed	Oregon Department of Environmental Quality Container Recovery Site Discovery file	ODEQ0009
Fred Devine Diving & Salvage, Inc.	Conventional: TSS, COD, pH, Oil & Grease, temperature	EVREN Northwest 2007; Evergreen Environmental Management, Inc.	EVN0001, EEM0001
Freightliner Truck Manufacturing	CBSO are composites, SW are not. Conventional: TSS, Hexavalent chrome	Maul Foster & Alongi, 2007	MFA0008
Galvanizers Company	Conventional: TOC	Anchor Environmental, LLC. 2007	AEL0006
Stormwater-PGE-Forest Park		City of Portland, 2007	COP0002
Linnton Plywood Association	Only TPH-Gas & diesel ranges reported	CH2M Hill, 2002	CH20006
McCall Oil, RI, July 2004	Conventional: TOC, TSS	Anchor Environmental, LLC., 2004	AEL0005
Northwest Pipe Company	Conventional: TSS, Oil & grease	CH2M Hill, 2005	CH20007
Zidell Property at 5200 NW Front Avenue	Only TPH-Gas & diesel ranges reported	Maul Foster Alongi, 1989	MFA0009
Oregon Steel Mill	Conventional: TSS, pH, DO, Redox, conductivity, pH, Redox potential, temperature, turbidity.	Exponent, 2003 Hart Crowser 1998	EXP0003, HCI0014

Table 4.4-5. Stormwater and Catch Basin Investigations under the JSCS Program.

Survey Name	Comment	Reference ^a	Phase Code
Owens Corning Linnton Site	Conventionals: TSS, oil & grease, pH, TOC. TPH-Gas result from NWTPH-HCID	Kennedy/Jenks Consultants, 2001, 2002, & 2007	KJC0001, KJC0002
Carson Oil	Conventionals: TOC, grain size Herbicides also analyzed	Oregon Department of Environmental Quality Carson Oil Site Discovery file	ODEQ0007
Owens-Corning, 3750 N.W. Yeon Avenue	Conventionals: TOC, Grain Size. Herbicides also analyzed	Oregon Department of Environmental Quality Site Discovery file	ODEQ0010
Paco / Sulzer Pumps	Some CBSO samples composited, not all. Conventionals: TSS, TOC, grain size, oil & grease.	Sterling Technologies, 2006; GeoDesign 2007; City of Portland 2007	STT0001, GDI0001, COP0001
USCG catch basin sampling	Conventionals: pH, flow, conductivity, temperature, turbidity, Na & K	TEC Inc., 2006	TEC0001
UPRR Albina	TPH-Gas result from NWTPH-HCID Butyltins also analyzed	Jacobs Engineering, 2000	JBE0003
GE 2007 stormwater outfall monitoring	Conventionals: TOC, DOC, TSS TPH - Only diesel range reported PCB congeners also reported.	AMEC, 2008	AMEC0001
City Outfall Basin 19 Inline Solids Sampling at the Former Calbag Metals		City of Portland, 2008	COP0004
City Outfall Basin 22B Inline Solids Evaluation	1 of the 4 samples is a composite. Conventionals: TOC. Herbicides also analyzed.	City of Portland, 2008	COP0008
City Outfall Basin 22C Northwest Drainage Pond Evaluation	Conventionals: TOC, volatile residue PCDD/Fs & Herbicides also reported	City of Portland, 2007	COP0007
City Outfall Basin 22C, Inline Solids Sampling in the Vicinity of Kopp	1 of the 7 samples is a composite. Conventionals: TOC, Cyanide	City of Portland, 2007	COP0006
City Outfall Basin 46 Inline Solids Sampling in the Vicinity of the Union Pacific Railroad Albina Yard	Conventionals: TOC Butyltins also analyzed	City of Portland, 2006	COP0010
City Outfall Basin 47 Inline Solids Sampling	Conventionals: TOC, grain size	City of Portland, 2007	COP0017
City Outfall Basin 48 Inline Solids Sampling	Conventionals: TOC, grain size	City of Portland, 2008	COP0011
City Outfall Basin 49 Inline Solids Sampling and Basin Priority Reassessment	Mercury only	City of Portland, 2006	COP0009
City Outfall Basin 52A Catch Basin Solids Sampling Adjacent to Mar Com		City of Portland, 2006	COP0012
City Outfall Basin M-2 Dry-Weather Flow Sampling	Zinc only	City of Portland, 2006	COP0013
City Outfall Basin M-3 Dry-Weather Flow Sampling	Metals: Cu, Pb, Zn	City of Portland, 2006	COP0014

Table 4.4-5. Stormwater and Catch Basin Investigations under the JSCS Program.

Survey Name	Comment	Reference ^a	Phase Code
City Outfall Basin S-5 Inline Solids Sampling		City of Portland, 2006	COP0015
City Outfall Basin S-6 Inline Solids Sampling	Conventional: TOC, grain size	City of Portland, 2008	COP0016
Basin 19 Stormwater sampling	7 of the 8 samples are composites Conventional: Oil & grease, nitrate, N-ammonia, total kjeldahl nitrogen, orthophosphate, total phosphorus, hardness, conductivity, TDS, TSS, temperature, pH, BOD, COD, hardness, E. Coli	City of Portland, 2008	COP0003
Basin 53 Stormwater sampling	4 of the 6 samples are composites Conventional: TSS, TOC, pH, conductivity, temperature PCB Congeners also reported	City of Portland, 2008	COP0018
Port of Portland Terminal 1 North Catch Basin Solids Data	Conventional: Grain size, TOC	City of Portland, 2007	COP0005
Siltronic catch basin and stormwater - June 2001, Nov 2006, Feb 2007	CBSO was a composite, stormwaters were not. Conventional: TDS, cyanide, TOC	AMEC, 2003, 2004, 2005	AMEC0003
Gunderson Outfall Effluent and Seep Monitoring (additional data)	Tributyl tin (only) also analyzed	Kleinfelder, 2008	KFI0008
T4 Spring 2007 outfall monitoring	Conventional: TOC, DOC, turbidity, Oil & Grease PCB congeners also analyzed	Ash Creek Assoc., 2007	
City of Portland 1200Z TSS monitoring data	TSS data	City of Portland data	
Chevron Willbridge Distribution Center catch basin monitoring	Conventional: Grain size, cyanide	Arcadis, 2007	ARCB0002
Former Chevron Willbridge Asphalt Plant Catch Basin	Solid samples were composites Conventional: TSS, grain size, cyanide. Some SVOCs full list, others PAH/Phthalates only	Arcadis, 2007	ARCB0001
Kinder Morgan Linnton catch basin (10/06) and stormwater (2007)	Conventional: TSS, TOC VOC: Benzene only	Delta Environmental Assoc.	
Kinder Morgan Willbridge stormwater and catch basin - May 2007	Conventional: TSS, TOC VOC: BTEX, n-, sec-butylbenzenes, n-propylbenzene, & 1,2,4-trimethylbenzene only	Delta Environmental Assoc.	
2005 stormwater sampling at the Arco/BP site		URS, 2006	URS0003

Table 4.4-5. Stormwater and Catch Basin Investigations under the JSCS Program.

Survey Name	Comment	Reference ^a	Phase Code
Arkema Stormwater February 15, 2007	TSS, perchlorate, Mg, hexchrome, PAH, pesticides	ESI 1/10/2007, Arkema Report 2 _stormwater	
Arkema Stormwater March 2, 2007	TSS, perchlorate, Mg, hexchrome, PAH, pesticides	ESI 1/10/2007, Arkema Report 3 _stormwater	
Arkema Stormwater March 19, 2007	TSS, perchlorate, Mg, hexchrome, PAH, pesticides	ESI 1/10/2007, Arkema Report 4 _stormwater	
Arkema Stormwater June 5, 2007	TSS, perchlorate, pH, Mg, hexchrome, PAH, pesticides	ESI 1/10/2007, Arkema Report 6 & 7 _stormwater	
Arkema Stormwater August 14, 2007	Solids, Hg, PCDD/Fs, PAH, PCP, pesticides, herbicides, VOC	ESI 1/10/2007, Arkema Report 9 _stormwater	
Rhône-Poulenc Outfalls 22B and 22C Effluent		Rhône-Poulenc Outfalls 22B and 22C Effluent	AMEC0001
Willbridge Terminals Catch Basin Solids for Stormwater Source Control		Upland Stormwater Source Control Status Report	DLT0001

Notes:

^aSee Appendix A1.

- BOD - biological oxygen demand
- BTEX - benzene, toluene, ethylbenzene, and xylenes
- CBSO - catch basin solid
- COD - chemical oxygen demand
- DO - dissolved oxygen
- DOC - dissolved organic carbon
- FY - fiscal year
- JSCS - Joint Source Control Strategy
- NWTPH - Northwest total petroleum hydrocarbons
- QA - quality assurance
- PAH - polycyclic aromatic hydrocarbon
- PCB - polychlorinated biphenyl
- PCDD/Fs - dioxins/furans
- PCP - pentachlorophenol
- SVOC - semivolatile organic compound
- TDS - total dissolved solids
- TOC - total organic carbon
- TPH - total petroleum hydrocarbon
- TSS - total suspended solids
- VOC - volatile organic compound
- XPA - expanded preliminary assessment

Table 4.4-6. Non-LWG Summary Statistics for Sediment Trap and Stormwater.

Analyte	CAS RN	Units	N	N Detected	% Detected	Detected Concentrations					Detected and Nondetected Concentrations				
						Minimum ^a	Maximum ^a	Mean	Median ^b	95th ^b	Minimum (full DL) ^a	Maximum (full DL) ^a	Mean (half DL)	Median (half DL) ^b	95th (half DL) ^b
Solid															
Metals															
Arsenic	7440-38-2	mg/kg	138	134	97.1	1.38	259	21.6	9.61	65.1	1.38	259	21.1	9.53	62.7
Chromium	7440-47-3	mg/kg	176	176	100	15.1	517	117	91.8	301	15.1	517	117	91.8	301
Copper	7440-50-8	mg/kg	184	184	100	23.9	13200	1370	413	5550	23.9	13200	1370	413	5550
Zinc	7440-66-6	mg/kg	184	184	100	135	17300	2410	1240	8000	135	17300	2410	1240	8000
Butyltins															
Tributyltin ion	36643-28-4	µg/kg	16	14	87.5	21	77	39.9	34.5	64.7	1.19 U	77	35	32.5	62.8
PCBs ^c															
Total PCBs	TOTPCBS	µg/kg	192	127	66.1	11 T	16700	764	266	3350	1.55 UT	16700	514	94.5	2510
Pesticides															
Aldrin	309-00-2	µg/kg	36	2	5.56	1.1	70.2	35.7	35.7	66.7	1.1	144 U	16.4	2.74	55.1
Dieldrin	60-57-1	µg/kg	36	5	13.9	4.42	47.1	24	12	47.1	1.9 U	463 U	21.4	3.94	47.8
Total Chlordanes	TOTCHLDANE	µg/kg	36	4	11.1	2.8 A	18 JT	9.38	8.35	17.3	0.93 UA	144 UA	16.9	4.34	47.2
Total DDx	E966176	µg/kg	36	15	41.7	8.91 A	360 A	58	37.4	163	3.95 UA	718 UA	72.9	39.8	277
Polycyclic Aromatic Hydrocarbons															
Total PAHs	130498-29-2	µg/kg	146	138	94.5	213 A	755000 A	26300	4900	66000	213 A	755000 A	24900	4690	61300
Phthalates															
Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	154	145	94.2	150	475000	34500	20900	101000	60 U	475000	32700	17500	99100
Water															
Metals															
Arsenic (dissolved)	7440-38-2	µg/L	30	3	10	1.08	5.49	3.42	3.7	5.31	0.028 U	1000 U	33.9	0.425	277
Arsenic	7440-38-2	µg/L	87	42	48.3	0.18 J	20.2	2.9	1.5	8.04	0.028 U	1000 U	7.36	0.5	6.88
Chromium (dissolved)	7440-47-3	µg/L	32	11	34.4	0.2	5	1.24	0.9	3.16	0.129 U	5 U	1.35	0.98	2.5
Chromium	7440-47-3	µg/L	113	82	72.6	0.512	88.7	7.91	3	40	0.129 U	88.7	6.03	2.32	29
Copper (dissolved)	7440-50-8	µg/L	40	28	70	2.46	48	12.8	8.27	36.7	0.788 U	48	10.4	5.95	32.4
Copper	7440-50-8	µg/L	139	128	92.1	0.81	1400	72.3	20.5	242	0.81	1400	66.9	18.4	207
Zinc (dissolved)	7440-66-6	µg/L	40	39	97.5	2.34	24000	1980	240	8640	2.34	24000	1930	232	8620
Zinc	7440-66-6	µg/L	144	141	97.9	2.87 J	48200	1670	260	7650	0.193 U	48200	1640	255	7550
Butyltins															
Tributyltin ion	36643-28-4	µg/L	2	1	50	0.00544	0.00544	0.00544	0.00544	--	0.000424 U	0.00544	0.00283	0.00283	0.00518
PCBs ^c															
Total PCBs	TOTPCBS	µg/L	64	2	3.13	0.029 JT	1.4 T	0.715	0.715	1.33	0.00946 UT	1.72 UT	0.197	0.195	0.5
PCDD/Fs															
TCDD TEQ (ND = 0)	TEQ_DIOXIN.0	pg/l	2	1	50	0.042 T	0.042 T	0.042	0.042	--	0.042 T	8.9 UT	2.25	2.25	4.23
Pesticides															
Aldrin	309-00-2	µg/L	10	2	20	0.00021 J	0.00026 J	0.000235	0.000235	0.000258	0.00011 UJ	0.0976 U	0.0108	0.00195	0.0381
Dieldrin	60-57-1	µg/L	10	0	0	--	--	--	--	--	0.0004 U	0.0976 U	0.0108	0.00195	0.0381
Total Chlordanes	TOTCHLDANE	µg/L	10	1	10	0.0017 JT	0.0017 JT	0.0017	0.0017	--	0.00073 UT	0.0976 UA	0.0109	0.00158	0.0381
Total DDx (dissolved)	E966176	µg/L	14	13	92.9	0.00213 A	0.247 A	0.0415	0.0286	0.128	0.00213 A	0.247 A	0.0387	0.0272	0.118
Total DDx	E966176	µg/L	24	18	75	0.00044 JT	4.48 A	0.592	0.314	1.85	0.00044 JT	4.48 A	0.456	0.264	1.3

Table 4.4-6. Non-LWG Summary Statistics for Sediment Trap and Stormwater.

Analyte	CAS RN	Units	N	N Detected	% Detected	Detected Concentrations					Detected and Nondetected Concentrations				
						Minimum ^a	Maximum ^a	Mean	Median ^b	95th ^b	Minimum (full DL) ^a	Maximum (full DL) ^a	Mean (half DL)	Median (half DL) ^b	95th (half DL) ^b
Polycyclic Aromatic Hydrocarbons															
Total PAHs	130498-29-2	µg/L	108	85	78.7	0.00509 T	31.8 JA	0.923	0.221	2.09	0.00509 T	31.8 JA	0.79	0.127	2.09
Phthalates															
Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	87	63	72.4	0.734	40 J	3.6	2.2	9.24	0.27 U	40 J	2.9	1.8	9.17

Notes:

^a Whenever several result values match maximum or minimum value, qualifier or descriptor preference has been given in the following order: U over J over A over N over T over no qualification.

^b Median is the exact result value ranking as the 0.50 percentile in an ascending list of all results, and 95th percentile is the exact result value of the 0.95 ranking result. When the ascending list of all results doesn't produce an exact match to the corresponding percentile rank, the average of two adjacent results ranking closest to 0.50 percentile is the median, and an interpolated value is the 95th percentile. Such median or 95th percentile value is not qualified. It is qualified with "U" if both results ranking immediately above and below the corresponding percentile are "U" qualified, and with "J" if at least one of the results is "J" qualified.

^c Total PCBs are total PCB congeners whenever available regardless of their qualification.

Reason codes for qualifiers:

J - The associated numerical value is an estimated quantity.

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

Reason codes for descriptors:

A - Total value based on limited number of analytes.

T - The associated numerical value was mathematically derived (e.g., from summing multiple analyte results such as Aroclors, or calculating the average of multiple results for a single analyte). Also indicates all results that are selected for reporting in preference to other available results (e.g., for parameters reported by multiple methods) for the Round 2 data.

-- data not available.

BaPEq - benzo(a)pyrene equivalent

cPAH- carcinogenic polycyclic aromatic hydrocarbon

DL - detection limit

PCB - polychlorinated biphenyl

PCDD/F - dioxin/furan

Table 4.4-7. Pretreatment Permittees where Industrial Wastewater Could Overflow to Portland Harbor through Control Structures — Status as of February 2011.

Type	Permittee	Address	Outfall ^a	RM	Permit Period	Basis of Permit Limits	COIs ^b
Food and Beverage-Related Industries	Bridgeport Brewing Co. ^c	1313 NW Marshall	11	11.4W	1990-current ^d	Local	pH, BOD, TSS
	Ocean Beauty Northwest Inc	2450 NW 28th	17	9.8W	2001-current	Local	pH, BOD, TSS
	Portland Brewing Co / Pyramid Brewing Inc	2730 NW 31st	17	9.8W	1990-current	Local	pH, BOD, TSS
Industrial Laundries	Aramark Uniform Services/ Aratex Industrial Laundry	1848 NW 23rd Ave	15	10.4W	1994-current ^d	Local	pH, oil & grease, metals, volatile organics
	Coverall Uniform Supply (Old)	2522 NE MLK Jr Blvd	44A	11.2E	1991-1993	Local	pH, oil & grease, metals, volatile organics
	Hospital Linen Svc.	1804 NW Northrup	11	11.4W	1993-1998	Local	pH, oil & grease, BOD, metals
	Portland Hospital Svc.	1804 NW Northrup	11	11.4W	1999-2000	Local	pH, oil & grease
Rubber Processing Industries	Cascade Rubber Products	1828 NW Quimby	11	11.4W	1989-1995	Local	pH, oil & grease, metals
	Griffith Rubber Mills	2439 NW 22nd Ave	15	10.4W	1989-1990	Local	pH, oil & grease, metals
Bag Manufacturing	Chase Packaging Corp/ Union Camp Corporation	2550 NW Nicolai	15	10.4W	1989-1996	Local	pH, oil & grease, metals
Photographic Processing, Printing and Press-Related Industries	Fred Meyer Photo Service	124 NW 20th Ave	11	11.4W	1990-1992	Local	pH, metals
	Graphic Arts Center	2000 NW Wilson	15	10.4W	1997-2001	Local	pH, metals
	Oregonian Publishing Co	1621 SW Taylor St	11	11.4W	1997-current ^d	Local	pH, oil & grease, metals
Battery Repair	Wagstaff Battery	2124 N Williams Ave	NA	NA	1992-1996	Non-Discharger ^e	NA - industrial wastewater discharges are prohibited
Paint Formulation	Ameritone Paint Corp	2100 NW 22nd Ave	NA	NA	1993-1995	Non-Discharger ^f	NA - industrial wastewater discharges are prohibited
	Drew Paints	1525 NW 23rd	NA	NA	1998-current	Non-Discharger ^f	NA - industrial wastewater discharges are prohibited
Transportation-Related Industries	Boise Cascade Trucking	2017 NW Vaughn	13	11.0W	1988-1995? ^g	Local	pH, oil & grease
	Consolidated Freightways (NW)	1633 NW 21st Ave	15	10.4W	1988-1997	Local	pH, oil & grease
Groundwater-Related Discharges	Don Rasmussen Co BMW	2001 SW Jefferson	11	NA	2005-2010 ^d	Remediation Site	Permitted but no discharge occurred
	Trimet Butler Blocks	1715 SW Salmon	11	11.4W	1994-1998	Remediation Site	pH, oil & grease, lead
	Trimet Light Rail	2140 SW Jefferson	11	11.4W	1993-1997	Construction Dewatering	pH, oil & grease
	Terra Vac	330 NW 23rd	15	10.4W	1996-1998	Remediation Site	pH, oil & grease, BTEX, lead
	Unocal 4548	1747 SW Jefferson	11	11.4W	1993-1998	Remediation Site	pH, oil & grease, BTEX, metals
Metals-Related Industries (Foundries, Metals Coating, etc)	Blackline Inc	2424 NW St Helens	17	9.8W	1994-current	Categorical	pH, oil & grease, metals, cyanide, TTOs
	ESCO Corporation	2141 NW 25th Ave	15	10.4W	1998-current ^d	Non-Discharger ^e	NA - industrial wastewater discharges are prohibited; however, batch discharges have been approved in the past. COIs are pH, oil & grease, metals and TTOs
	ESCO Corporation (Plant #3)	2211 NW Brewer	15	10.4W	1993-current ^d	Non-Discharger ^f	NA - industrial wastewater discharges are prohibited; however, batch discharges have been approved in the past. COIs are pH, oil & grease, metals and TTOs
	Galvanizers	2406 NW 30th	NA	NA	<1988-current	Non-Discharger ^e	NA - industrial wastewater discharges are prohibited
	King Cycle Group	2801 NW Nela	NA	NA	2006 - current	Non-Discharger ^e	NA - industrial wastewater discharges are prohibited
	Oregon Retinners	2712 N Mississippi	NA	NA	1993-2007	Non-Discharger ^e	NA - industrial wastewater discharges are prohibited
	Pacific States Galvanizing	820 NW 15th Ave / 805 NW 14th Ave.	NA	NA	1986-1996	Non-Discharger ^e	NA - industrial wastewater discharges are prohibited
	Rejuvenation Inc	2550 NW Nicolai	15	10.4W	2000-current ^d	Categorical	pH, oil & grease, metals, cyanide, TTOs
	Specialty Finishes Inc	3805 N Mississippi	46	10.5E	1999-2003	Categorical	pH, oil & grease, metals, cyanide, TTOs
	Wade Manuf. Co. Foundry	2420 NW 31st	NA	NA	1992-2002	Non-Discharger ^e	Process wastewater discharges are prohibited except for air compressor condensate

Source: City of Portland Annual Pretreatment Reports from 1983 - 2009. Additional pretreatment records consulted to identify permit period and COIs.

Table 4.4-7. Pretreatment Permittees where Industrial Wastewater Could Overflow to Portland Harbor through Control Structures — Status as of February 2011.

Type	Permittee	Address	Outfall ^a	RM	Permit Period	Basis of Permit Limits	COIs ^b
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Notes:

^aOutfall where potential diversion could discharge to river

^bCOIs identified as those chemicals for which pretreatment permit limits were established

^cLocation of connection to City system uncertain, may not discharge to pipe with a downstream diversion structure

^dSite discharge directed to tunnel in 2006

^ePermitted based on procedures contained in the CoP's approved pretreatment program. NOTE: these facilities elect not to discharge

^fFederal mandate to permit this facility based on its regulated process and zero-discharge limitation (i.e., mandated not to discharge wastewater from its process)

^gNon-Significant Industrial Users not included in 1993-1995 Annual Reports; no records of when permit was terminated but facility not listed in 1996 Annual Report

BOD - biological oxygen demand

BTEX - benzene, toluene, ethylbenzene, and xylenes

COI - contaminant of interest

COP - City of Portland

NA - not applicable

RM - river mile

TSS - total suspended solids

TTO - total toxic organics

Table 4.5-1. Active NPDES Permitted Discharges to the Lower Willamette River, Outside the Study Area.^a

		Location		Permit		River
File No.	Facility	Latitude	Longitude	Category	Type	Mile
Major NPDES - Individual Permit						
84069	BOISE WHITE PAPER, L.L.C.	45.85	-122.8	DOM	NPDES-DOM-A2	MC
16590	CLACKAMAS COUNTY SERVICE DISTRICT #1	45.4398	-122.6424	DOM	NPDES-DOM-A3	18.6
70735	PORTLAND, CITY OF	45.4213	-122.6579	DOM	NPDES-DOM-Ba	20.1
89700	TRI-CITY SERVICE DISTRICT	45.3759	-122.5892	DOM	NPDES-DOM-Ba	25.1
108013	GRESHAM, CITY OF; FAIRVIEW, CITY OF; MULTNOMAH COUNTY	45.5164	-122.5353	STM	NPDES-DOM-MS4-1	multiple
72634	BLUE HERON PAPER COMPANY	45.3562	-122.6105	IND	NPDES-IW-B01	25.9
21489	WEST LINN PAPER COMPANY	45.3564	-122.6154	IND	NPDES-IW-B01	26.0
Minor NPDES - Individual Permit						
30554	FOREST PARK MOBILE VILLAGE LLC	45.3382	-122.641	DOM	NPDES-DOM-Da	26.0
78980	SCAPPOOSE, CITY OF	45.7526	-122.8559	DOM	NPDES-DOM-Da	MC
109444	ANKROM MOISAN ASSOCIATED ARCHITECTS, INC.	45.479	-122.6728	IND	NPDES-IW-B15	15.4
110220	GSL PROPERTIES, INC.	45.5174	-122.6726	IND	NPDES-IW-B16	12.7
113611	I. WATER SERVICES, INC.	45.4994	-122.6706	IND	NPDES-IW-B16	14.0
General Permits						
104545	NORCREST CHINA COMPANY; WHEAT MARKETING CENTER, INC.	45.5292	-122.673	IND	GEN01	11.8
38192	HERCULES INCORPORATED	45.5473	-122.709	IND	GEN01	12.0
48480	LAKE OSWEGO, CITY OF	45.3859	-122.6325	IND	GEN02	23.2
78985	GLACIER NORTHWEST, INC.	45.75	-122.8755	IND	GEN10	MC
14700	NORTHWEST AGGREGATES CO.	45.787	-122.8506	IND	GEN10	MC
76839	ROSS ISLAND SAND & GRAVEL CO.	45.4927	-122.6564	IND	GEN10	14.5
113907	SCAPPOOSE SAND AND GRAVEL CO.	45.765	-122.8744	IND	GEN10	MC
107335	EAGLE STAR ROCK PRODUCTS, LLC	45.8706	-122.84	STM	GEN12A	MC
107661	LAKE SHORE CONCRETE CO.	45.4204	-122.6613	STM	GEN12A	20.0
120282	ACC OP (PSU COLLEGE STATION) LLC	45.5091	-122.6833	STM	GEN12C	13.2
119758	ANDERSEN CONSTRUCTION COMPANY	45.4197	-122.6725	STM	GEN12C	20.7
114072	CHESAPEAKE HOLDINGS MAC, LLC	45.3626	-122.6374	STM	GEN12C	24.1
118241	CITY LIGHTS DEVELOPMENT, LLC	45.5085	-122.688	STM	GEN12C	13.1
120538	CITY OF OREGON CITY PUBLIC WORKS	45.3709	-122.5855	STM	GEN12C	25.1
119537	CITY OF PORTLAND - BUREAU OF ENVIRONMENTAL SERVICES	45.4622	-122.6608	STM	GEN12C	16.7
119547	CITY OF PORTLAND, BES	45.423	-122.6591	STM	GEN12C	20.0
120514	COLUMBIA COUNTY TRANSIT DIVISION	45.87	-122.8144	STM	GEN12C	MC
115892	D.R. HORTON, INC. - PORTLAND	45.3617	-122.6344	STM	GEN12C	24.1
119796	DAN OBRIST EXCAVATION, INC.	45.7523	-122.8783	STM	GEN12C	MC
117004	DOUGLAS PARK, LLC	45.3539	-122.6457	STM	GEN12C	26.0
109884	ELK MEADOW DEVELOPMENT LLC	45.8706	-122.8343	STM	GEN12C	MC
117160	FIVE STAR BUILDERS	45.8607	-122.8383	STM	GEN12C	MC
117811	HOFFMAN CONSTRUCTION COMPANY OF OREGON	45.5195	-122.6812	STM	GEN12C	12.8
117139	ICON CONSTRUCTION & DEVELOPMENT, LLC	45.3375	-122.6111	STM	GEN12C	26.0
117931	ICON CONSTRUCTION & DEVELOPMENT, LLC	45.3379	-122.6236	STM	GEN12C	26.0
120223	KEN LEAHY CONSTRUCTION	45.7441	-122.8751	STM	GEN12C	MC
115102	KIEWIT - BILFINGER BERGER, AJV (KBB)	45.5074	-122.6627	STM	GEN12C	13.5
116690	LARRY OLSON	45.8485	-122.8213	STM	GEN12C	MC
118277	LEGACY HEALTH SYSTEM	45.5445	-122.6701	STM	GEN12C	11.3
119822	N CLACKAMAS PARKS & RECREATION DISTRICT	45.4394	-122.6413	STM	GEN12C	18.6
111942	NORTH MACADAM INVESTORS, LLC	45.4971	-122.6689	STM	GEN12C	14.2
119240	NURTURE 247 LIMITED PARTNERSHIP	45.5341	-122.6852	STM	GEN12C	11.1
116446	OLSON, LARRY	45.7685	-122.8803	STM	GEN12C	MC
119663	PACIFIC REALTY OF OREGON, LLC	45.3727	-122.5955	STM	GEN12C	25.0
111958	PARK PLACE DEVELOPMENT, INC.	45.3723	-122.5851	STM	GEN12C	25.1
113966	RENAISSANCE DEVELOPMENT CORPORATION	45.3648	-122.6321	STM	GEN12C	24.1
109786	RIDGECREST DEVELOPMENT III, LLC	45.8492	-122.8545	STM	GEN12C	MC
118889	ROSS ISLAND SAND & GRAVEL CO.	45.4818	-122.6631	STM	GEN12C	15.2
120368	SEMLING CONSTRUCTION INC	45.8383	-122.82	STM	GEN12C	MC
118952	SK COMPANY OF OREGON LLC	45.5044	-122.6637	STM	GEN12C	13.7
115743	SOUTH ROSE, LLC	45.3325	-122.6303	STM	GEN12C	26.0
119332	STACY AND WITBECK, INC.	45.53	-122.6605	STM	GEN12C	12.1
120333	THE KROGER CO	45.4709	-122.6874	STM	GEN12C	16.1
117303	THE LANDING AT MACADAM, LLC	45.4943	-122.6702	STM	GEN12C	14.4
116453	TRAMMELL CROW NW DEVELOPMENT, INC.	45.6313	-122.769	STM	GEN12C	0.8
120332	TURNER CONSTRUCTION CO	45.5211	-122.6916	STM	GEN12C	11.2
120213	ZRZ REALTY COMPANY	45.5	-122.6702	STM	GEN12C	14.0
70725	PORTLAND, CITY OF	45.5975	-122.719	STM	GEN12C	multiple
111942	NORTH MACADAM INVESTORS, LLC	45.4971	-122.6689	STM	GEN12C	14.2
119542	MARTHA'S GREEN, INC.	45.4231	-122.6377	STM	GEN12C(AGENT)	19.4

Table 4.5-1. Active NPDES Permitted Discharges to the Lower Willamette River, Outside the Study Area.^a

File No.	Facility	Location		Category	Permit		River Mile
		Latitude	Longitude		Type		
62795	OAK LODGE SANITARY DISTRICT	45.4241	-122.6518	STM	GEN12C(AGENT)		19.8
112041	PARKER PROPERTIES, INC.	45.3754	-122.5997	STM	GEN12C(AGENT)		24.8
119162	RIVERSIDE AT FINLEY, LLC	45.3875	-122.6202	STM	GEN12C(AGENT)		23.3
109995	ARCHER-DANIELS-MIDLAND COMPANY	45.4848	-122.6438	STM	GEN12Z		15.0
118557	BLOUNT, INC.	45.4018	-122.622	STM	GEN12Z		22.7
111529	BOISE WHITE PAPER, L.L.C.	45.8508	-122.884	STM	GEN12Z		MC
110997	CALAWAY PROPERTIES, LLC	45.8505	-122.8195	STM	GEN12Z		MC
118130	CALEDONIAN ALLOYS	45.4532	-122.6439	STM	GEN12Z		18.3
113927	COLUMBIA COUNTY LAND DEVELOPMENT SERVICES	45.8426	-122.8161	STM	GEN12Z		MC
111283	COLUMBIA GRAIN, INC.	45.6358	-122.769	STM	GEN12Z		0.8
117429	COLUMBIA RIVER STONE INC	45.3753	-122.585	STM	GEN12Z		25.1
107211	DARIGOLD, INC.	45.503	-122.6597	STM	GEN12Z		13.8
106750	EAST SIDE PLATING, INC.	45.5134	-122.663	STM	GEN12Z		13.1
107331	ESCO CORPORATION	45.6261	-122.8074	STM	GEN12Z		2.9
64905	EVRAZ INC. NA	45.6256	-122.7794	STM	GEN12Z		2.5
112645	FIRST STUDENT, INC.	45.7775	-122.8775	STM	GEN12Z		MC
107733	HARDER MECHANICAL CONTRACTORS INC	45.451	-122.637	STM	GEN12Z		18.3
103594	ICTSI OREGON, INC.	45.6319	-122.748	STM	GEN12Z		MC
70613	KINDER MORGAN BULK TERMINALS, INC.	45.6346	-122.771	STM	GEN12Z		1.2
109196	MCCORMICK PILING & LUMBER CO.	45.834	-122.8249	STM	GEN12Z		MC
116824	METRO	45.3711	-122.5886	STM	GEN12Z		25.1
100515	MILES FIBERGLASS & COMPOSITES INC.	45.363	-122.6007	STM	GEN12Z		25.4
62795	OAK LODGE SANITARY DISTRICT	45.4241	-122.6518	STM	GEN12Z		19.8
111331	OLDCASTLE APG WEST, INC.	45.5402	-122.6798	STM	GEN12Z		11.0
113693	OREGON TRANSFER CO.	45.4527	-122.6373	STM	GEN12Z		18.3
112042	PACIFIC COAST FRUIT COMPANY	45.5237	-122.6643	STM	GEN12Z		12.3
115817	PCC STRUCTURALS, INC.	45.4494	-122.6345	STM	GEN12Z		18.3
117878	RECOLOGY OREGON MATERIAL RECOVERY, INC.	45.3741	-122.5856	STM	GEN12Z		25.1
101733	STANLEY WORKS, THE	45.3996	-122.6234	STM	GEN12Z		22.7
110122	TRI-CITY SERVICE DISTRICT	45.3759	-122.5892	STM	GEN12Z		25.1
102121	UNION PACIFIC RAILROAD COMPANY	45.5436	-122.6811	STM	GEN12Z		10.9
108162	UNION PACIFIC RAILROAD COMPANY	45.4867	-122.6442	STM	GEN12Z		14.9
107609	US POSTAL SERVICE	45.5294	-122.6789	STM	GEN12Z		11.5
21489	WEST LINN PAPER COMPANY	45.3564	-122.6154	STM	GEN12Z		26.0
112909	WILSON OIL, INC.	45.8469	-122.8215	STM	GEN12Z		MC
104861	ZIDELL MARINE CORPORATION	45.5002	-122.6705	STM	GEN12Z		14.0
100103	PACIFIC SAW AND KNIFE COMPANY - DBA	45.465	-122.6355	STM	GEN12Z		14.2
107631	EDWARDS, MARJORIE L	45.4624	-122.7029	IND	GEN15A		20.2

Notes:

^a DEQ Wastewater permits database accessed February 2011 (<http://www.deq.state.or.us/wq/sisdata/facilitycriteria.asp>)

Definitions:

DOM - Domestic
 GEN01 - Cooling water/heat pumps
 GEN02 - Filter backwash
 GEN10 - Industrial wastewater - WPCF sand & gravel mining
 GEN12A - Stormwater from gravel mining
 GEN12C - Stormwater - NPDES construction more than 1 acre disturbed ground
 GEN12C(AGENT) - Construction that disturbs more than one acre, issued by agent
 GEN12Z - Stormwater - NPDES specific SIC codes
 GEN15A - Petroleum hydrocarbon cleanups
 IND - Industrial
 MC - Multnomah Channel
 NPDES-DOM-A1 - Sewage - 50 MGD or more
 NPDES-DOM-A2 - Sewage - 25 MGD or more, but less than 50 MGD
 NPDES-DOM-A3 - Sewage - 10 MGD or more but less than 25 MGD
 NPDES-DOM-Ba - Sewage - 5 MGD or more but less than 10 MGD
 NPDES-DOM-Da - Sewage - less than 1 MGD
 NPDES-DOM-MS4-1 - Municipal Stormwater Permit
 NPDES-IW-B01 - Pulp, paper, or other fiber pulping industry
 NPDES-IW-B08 - Primary smelting and/or refining, ferrous and non-ferrous metals not elsewhere classified
 NPDES-IW-B15 - Facilities not elsewhere classified which dispose of process wastewater (includes remediated groundwater)
 NPDES-IW-B16 - Facilities not elsewhere classified which dispose of non-process wastewaters
 STM - Stormwater

Table 4.5-2. Major Historical Sources of Industrial Wastes in the Willamette River Basin Upriver from Portland Harbor (OSSA 1967b).

Source	Receiving Stream	RM	Type of Waste	Present Treatment	Sanitary Waste Disposal	Needed Action
Weyerhaeuser Company Lumber and Plywood	Coast Fork	187	Glue wastes and log pond overflow	Discharge to log pond	Septic tank, drainfield	(4) (5)
Bohemia Lumber Co.	Row River (Culp Creek)	187	Glue wastes and log pond overflow	Waste through 400-yard settling ditch	Septic tank, drainfield	(4) (5)
Hines Lumber Co. (Westfir)	N. Fork of Middle Fork Willamette	187	Glue wastes and log pond (in river)	None	Septic tank, drainfield	(4) (5)
Springfield Slaughter Plant	Willamette	184	Slaughterhouse wastes	Screening and holding pond		Study by OSSA to determine adequacy of treatment.
Wildish Sand and Gravel Co.	Willamette	184	Gravel removal and process wash water	10-acre holding pond for silt removal and gravel removal operations confined to areas inside berms (provides adequate interim control).	Septic tank, drainfield	Permanent waste control facilities for all waste waters by June 1967.
Natron Plywood	Willamette	184	Glue wastes	50' x 50' lagoon with discharge to slough 1.5 miles from main Willamette	Septic tank, drainfield	(5)
Georgia Pacific Co. (Springfield)	Willamette	184	Glue wastes and log pond overflow	Glue wastes to city	City	(4) (5)
Weyerhaeuser Corp. (Springfield)	McKenzie	172	Kraft mill wastes and log pond discharge	Settling ponds, aerated lagoon, City land disposal, aerated log pond		Continued surveillance
Georgia Pacific Corp. (Junction City)	Willamette	164	Glue wastes	Settling channels to Flat Creek	Septic tank, drainfield	(5)
Barker-Willamette Lumber Co.	Amazon Creek	146	Glue wastes	Disposal field	Septic tank, drainfield	(5)
International Paper Company	Long Tom	146	Glue wastes and log pond overflow	Settling tank to Noel Creek	Septic tank, drainfield	(4) (5)
Evans Products Co. (Corvallis)	Willamette	132	Hardboard plant wastes batter separator plant wastes	Primary settling pond	Septic tank, drainfield	Secondary treatment or equivalent control of all waste discharges by May 1968 (engineering study underway) (8)

Table 4.5-2. Major Historical Sources of Industrial Wastes in the Willamette River Basin Upriver from Portland Harbor (OSSA 1967b).

Source	Receiving Stream	RM	Type of Waste	Present Treatment	Sanitary Waste Disposal	Needed Action
Brown and Company (Corvallis)	Willamette	132	Process water from repulping of newsprint for production of bituminous pipe	None	Septic tank, drainfield	Secondary treatment or equivalent control of all waste discharges by May 1968 (plans underway for development of completely closed system)
Vancouver Plywood Corp. (Albany)	Calapooya	120	Glue wastes	Waste washed to storm drain	City	(5)
Steen Bros. Meat Co.	Calapooya	120	Slaughterhouse wastes	Septic tank and drainfield	Septic tank, drainfield	Study by OSSA to determine adequacy of present facilities.
Oregon Metallurgical Co. (Albany)	Willamette	119	Zirconium processing	pH adjustment, discharge to Oak Cr.	Septic tank, drainfield	OSSA study to determine needs (have retained engineering consultant to design treatment and control facilities for proposed expansion). (8)
Wah Chang Corp. (Albany)	Willamette	119	Process water from production of rare earth metals	pH adjustment and chemical sludge removal	Septic tank, drainfield	Program approved by OSSA for improved control of toxic waste discharges and chemical sludge handling by October 1967 (engineering plans underway and equipment on order) (8)
Western Kraft Corp. (Albany)	Willamette	117	Kraft mill wastes	Primary sedimentation	Septic tank, drainfield	Secondary treatment or equivalent control of total mill wastes by May 1968.
Crown Zellerbach Corp. (Lebanon)	South Santiam	109	Sulfite mill wastes and linerboard production wastes	Primary sedimentation. Evaporation of SWL and burning or by-production recovery	City	Secondary treatment or equivalent control of total mill wastes by May 1968.
U.S. Plywood Corp. (Lebanon)	South Santiam	109	Glue wastes and log pond overflow	None	Septic tank, chlorination to log pond	(4) (5)

Table 4.5-2. Major Historical Sources of Industrial Wastes in the Willamette River Basin Upriver from Portland Harbor (OSSA 1967b).

Source	Receiving Stream	RM	Type of Waste	Present Treatment	Sanitary Waste Disposal	Needed Action
Western Veneer Plywood (Lebanon)	South Santiam	109	Glue wastes	Settling tank to log pond		(5)
Jefferson Woolen Mill	Morgan Creek	109	Dye and wool fibers	None	Septic tank, drainfield	Secondary treatment or equivalent control by May 1968.
Willamette Valley Lumber (Dallas)	Ask Creek to Rickreall Cr.	88	Glue wastes and log pond overflow	Glue wastes to city sewer	City	(4) (5)
Boise Cascade Corp. (Salem)	Willamette	85	Sulfite mill wastes	Storage of all SWL during summer months	City	Primary settling facilities under construction. Chemical recovery and secondary treatment or equivalent control by July 1972.
U.S. Plywood (Willamina)	South Yamhill	55	Glue wastes	None	Septic tank, drainfield	(5)
Les' Poultry (McMinnville)	North Yamhill	55	Poultry slaughterhouse wastes	Septic tank and inadequate land disposal	Septic tank, drainfield	Connection to city sewer
Publishers Paper Co. (Newberg)	Willamette	50	Sulfite mill wastes	Primary sedimentation year-round and storage of SWL during low flow months (June 1 - November 1)	City	Chemical recovery and secondary treatment or equivalent control of total mill wastes by July 1972.
Butler Farms (formerly Phillips Bros.)	Pudding	36	Silage wastes	Collection ponds and irrigation	Septic tank, drainfield	Continued surveillance
West Food Co. (Salem)	Pudding	36	Mushroom growing and processing water	Lagoon and land irrigation	Septic tank, drainfield	Connect to city sewer (engineering study underway)
Birds Eye Div., General Foods (Woodburn)	Pudding	36	Fruit and vegetable processing	Screens, pre-aeration, oxidation lagoons, land disposal	City	Continued surveillance
Forest Fiber Products	Scoggins Cr.	29	Hardboard mill wastes	Primary settling, land disposal during low flow months	Septic tank, drainfield	OSSA study to determine adequacy of existing facilities during summer 1967.
Arrow Meat Co. (Cornelius)	Council Creek	29	Slaughterhouse wastes	Screening, grease removal, blood removal, land disposal low flow	Septic tank, drainfield	Continued surveillance

Table 4.5-2. Major Historical Sources of Industrial Wastes in the Willamette River Basin Upriver from Portland Harbor (OSSA 1967b).

Source	Receiving Stream	RM	Type of Waste	Present Treatment	Sanitary Waste Disposal	Needed Action
Tektronix (Beaverton)	Beaverton Cr.	29	Metal plating	pH adjustment, chemical treatment, settling and oxidation lagoons	Oxidation ditch	Continued surveillance
Kummer Meat Co.	Dairy Creek	29	Slaughterhouse wastes	Screening, grease removal, blood removal, lagooning (non-over-flow in low flow)	Septic tank, drainfield	Continued surveillance
Permapost Products Company	Rock Creek	29	Phenols and osmose salts	Baffled oil separation tank, lagoon for holding osmose salts	Septic tank, drainfield	Improved in-plant and process control and continued surveillance
Hervin Dog Food Co.	Tualatin R.	29	Processing of animals for pet food	Activated sludge plant for industrial wastes	Septic tank, drainfield	Improved plant operation and continued surveillance. (8)
Alpenrose Dairy	Fanno Creek	29	Dairy barn wastes, milk and cheese processing wastes	Extended aeration and aerated lagoon irrigation during summer months	Septic tank, disinfection and to IW system	Connect to city sewer.
The Dickinson Co.	Fanno Creek	29	Wastes from processing jams and jellies	Settling pond	Septic tank, drainfield	Connect to city sewer.
Crown Zellerbach Corp. (West Linn)	Willamette	26	Sulfite mill wastes	Primary sedimentation year-round and SWL stored in lagoons during low flow months	City	Reduce load equal to chemical recovery and secondary treatment or equivalent control of total mill wastes by June 1968.
Publishers Paper Co. (Oregon City)	Willamette	26	Sulfite mill wastes	SWL barged to Columbia River during low flow (primary sedimentation facilities under construction)	City	Reduce load equal to chemical recovery and secondary treatment or equivalent control of total mill wastes by June 1968; no barging to Columbia after 1969.
Logan Egg Farm	Foster Creek (Clackamas)	25	Chicken manure and egg washing	Lagoon, land disposal by sprinkle irrigation	Septic tank, drainfield	Continued surveillance
Bigger and Better Poultry	Kellogg Creek	18	Chicken processing waste	Settling and spray irrigation	Septic tank, drainfield	Continued surveillance (contemplating re-location)

Table 4.5-2. Major Historical Sources of Industrial Wastes in the Willamette River Basin Upriver from Portland Harbor (OSSA 1967b).

Source	Receiving Stream	RM	Type of Waste	Present Treatment	Sanitary Waste Disposal	Needed Action
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Notes:

Action for Municipalities of the Willamette Basin

(1) Injunctive action filed in Polk County Circuit Court, 12/19/66.

(2) Seven private properties connected to private sewer. Program under way to abate private discharges. No progress by city for providing municipal sewerage system.

(3) A portion of the area (industrial and domestic) is connected to area storm sewers. Program under way to collect and pump area wastes to Portland sewage treatment plant.

General Treatment, Studies, or Other Action

(4) Study requested by OSSA of FWPCA Water Laboratory, Corvallis, Oregon, to determine the effects of log storage and handling practices and to recommend possible alternate procedures.

(5) Study in progress by FWPCA Water Laboratory, Corvallis to recommend methods of treatment or disposal of glue wastes.

(6) Secondary treatment of sewage wastes by July 1972.

(7) Application has been filed for 702 planning funds from HUD. Engineering plans under way for small segment of study area.

(8) Monthly reports needed.

Table 4.5-3. Summary of Willamette River Sub-basin TMDLs.

Sub-basin	Approval Date	Parameter				
		Temperature	Dissolved Oxygen	Bacteria	pH	Toxics
Willamette Basin	September 29, 2006	X		X		Mercury
Lower Willamette Subbasin		X		X		Mercury DDT and dieldrin ^a
Clackamas Subbasin		X		X		Mercury
Middle Willamette Subbasin		X		X		Mercury
North Santiam Subbasin		X		X		Mercury
South Santiam Subbasin		X		X		Mercury
Upper Willamette Subbasin		X	X ^b	X		Mercury
McKenzie Subbasin		X		X		Mercury
Middle Fork Subbasin		X		X		Mercury
Coast Fork Subbasin		X		X		Mercury
Columbia Slough Watershed	November 25, 1998	X	X	X	X	DDE/DDT, PCBs, lead, dieldrin, and 2,3,7,8-TCDD
Mollala-Pudding Subbasin	December 31, 2008	X		X		Iron, chlordane, dieldrin, and DDT
Pudding River	December 18, 1993		X			
Tualatin Subbasin	August 7, 2001	X	X	X		
Yamhill Subbasin	March 16, 1992					

Source: Oregon Department of Environmental Quality (www.deq.state.or.us/wq/tmdls/tmdls.htm); accessed in February 2011.

Notes:

TMDL - total maximum daily load

^a TMDL for DDT and dieldrin established in 1998 for Johnson Creek.

^b TMDL developed for the Amazon Diversion Channel and Coyote Creek.

^c TMDL developed for the Fern Ridge Reservoir.

^d TMDL developed in 1995 for the Coast Fork Willamette.