Table 2-1. Proposed Stormwater Sampling Locations.

Outfall(s)	Facility or Location	River Mile	Land Use	Industrial or Land Use Type
Industrial Locations (12 Outfalls)				
WR-24	OSM	2.1	Heavy Industrial	Steel Manufacturing
WR-121 or WR-123	Schnitzer International Slip	3.7	Heavy Industrial	Metals
WR-108	Schnitzer - Riverside	4	Heavy Industrial	Metals
WR-107	GASCO	6.4	Heavy Industrial	MGP
WR-6	Rhone Poulenc	6.9	Heavy Industrial	Pesticide and herbicide
WR-96	Arkema	7.3	Heavy Industrial	Chemical Manufacturing
WR-14	Chevron - Transportation	7.7	Heavy Industrial	Bulk Fuel
WR-161	Portland Shipyard	8.2	Heavy Industrial	Ship maintenance and Repair
M-1, above Fred	City Outfall Draining Industrial Area	Swan Island	Light Industrial	Various Light Industrial Uses
WR-1 or through WR-	Sulzer Pump	10.4	Heavy Industrial	Manufacturing
WR-145	Gunderson	8.9	Heavy Industrial	Barge and Railroad Car
WR-148	Gunderson (former Schnitzer)	9	Heavy Industrial	Metals Handling
Land Use-Based and General Urban (12 Outfalls)				
OF-17	City Mixed Urban Use Basin	9.7	Mixed Urban Use	Mixed Urban Use
Hwy 30 Outfall	Hwy 30	TBD	Major Transportation	Highways
OF 19	City Mixed Urban Use Basin	8.4	Mixed Urban Use	Mixed Urban Use
OF-49	St. Johns (City Outfall)	6.5	Residential	Local traffic/residential
WR-66	Siltronic	6.5	Heavy Industrial	Silicon wafer manufacturing
OF-22C (above Hwy	Forest Park (City Outfall)	6.9	Open Space (Forest Park)	Forest land
WR-22B	City Outfall draining Front Avenue	6.9	Heavy Industrial	Chemical Mfc
OF-M2	Mocks Bottom (City Outfall)	Swan Island	Light Industrial	Trucking and Distribution
OF-22	Willbridge	7.7	Heavy Industrial	Petroleum
OF-16	Multiple	9.7	Mixed Industrial Use	Mixed Use
WR-218	UPRR Albina	10	Heavy Industrial	Railyard
OF-12a	ODOT Outfall - drains Hwy 30 and 405 interchange and discharges at Fremont Bridge.	11.1	Major Transportation	Highways
T4- Recontamination Evaluation (7 Outfalls)				
OF-52-C	T-4 (City Outfall)	4.3	Light Industrial	Materials
OF-53	Residential above T4	5.1	Residential	Local traffic/residential

Table 2-1. Proposed Stormwater Sampling Locations.

Outfall(s)	Facility or Location	River Mile	Land Use	Industrial or Land Use Type
WR-183/Basin R	T-4, Slip 1	4.3	Heavy Industrial	Materials
WR-181/Basin Q.	T-4, Slip 1	4.3	Heavy Industrial	Materials
WR-177/Basin M	T-4, Slip 1	4.3	Heavy Industrial	Materials
WR-20/Basin L	T-4 - Wheeler Bay	4.5	Heavy Industrial	Materials
WR-169/Basin D	T-4 (Toyota)	4.7	Light Industrial	Materials

Table 2-2. Number of Samples Collected

Sediment Samples

Parameter	Natural Samples	Field Replicates	Field Rinsate Blank for Phthalates	Total Number of Samples
PCB Congeners	31	2	0	33
TOC	31	2	0	33
Percent Solids	31	2	0	33
Organochlorine pesticides	31	2	0	33
PAHs and Phthalates	31	2	2	35
Metals	31	2	0	33
Herbicides	31	2	0	33
Grain size	31	2	0	33

Stormwater Samples

Parameter	Natural Samples	Field Replicates	Field Rinsate Blanks	Total Number of Samples per Event	Total for 3 events
Stormwater Composite Samples					
TSS	31	2	2	35	105
TOC	31	2	2	35	105
Total Metals	31	2	2	35	105
Filtered Metals	31	2	2	35	105
PAHs	31	2	2	35	105
Phthalates*	12	1	1	14	42
PCB Congeners	31	2	2	35	105
Herbicides	31	2	2	35	105
Stormwater Grab Samples [1]					
TSS	20	1	1	22	NA
TOC	20	1	1	22	NA
PAHs	20	1	1	22	NA
Phthalates*	8	1	1	10	NA
PCB Congeners	20	1	1	22	NA
Herbicides	20	1	1	22	NA

[1] These 10 grab samples will be analyzed for total and dissolved constituents to yield 20 samples for the laboratory. Each of these samples will be field filtered prior to analysis. Concentrations from the field filtered aliquots will be reported by the laboratory as dissolved concentrations. Does not yet include T-4 sampling sites (locations need to be confirmed).

*Phthalates are only sampled at potential source and a few selected non-potential source sites. Does not yet include T-4 phthalate sampling sites (locations need to be confirmed).

Table 2-3. Stormwater Analytes, Methods, Detection Limits, and Sample Size.

Priority	Analyte	Method Protocol	Method Procedure	Units	Min. Sample Size		Additional mass for Lab QC		Addl. MassField for field dup/rep	
Sediment Samples										
1A	PCB Congeners	EPA 1668A	HRGC/HRMS	pg/g	10	g	20	g	10	g
1B	TOC	Plumb 1981	Combustion: coulometric titration	percent	1	g	2	g	1	g
1C	Percent Solids	PSEP 1986	Gravimetric	percent	1	g	2	g	1	g
2	Organochlorine pesticides	EPA 8081A	GC/ECD	µg/kg	10	g	20	g	10	g
3	PAHs and Phthalates	EPA 8270C	GC/MS low-level LVI	µg/kg	20	g	40	g	20	g
4	Metals	EPA 6020/7471A	ICP/MS; CVAA for Hg	mg/kg	15	g	30	g	15	g
5	Herbicides	EPA 8151A	GC/ECD	µg/kg	10	g	20	g	10	g
6	Grain size	PSEP 1986	Sieves and pipette method	percent	100	g	200	g	100	g
Subtotal					167	g	334	g	167	g
Water Samples										
1	TSS	EPA 160.1	Filtration and drying	mg/L	0.5	L	1	L	0.5	L
2	TOC	EPA 414.1	Chemical oxidation	mg/L	0.05	L	0.1	L	0.05	L
3	Total Metals	EPA 6020/7471A	ICP/MS; CVAA for Hg	µg/L	0.3	L	0.6	L	0.3	L
4	PAHs1	EPA 8270C	GC/MS SIM	µg/L	1	L	2	L	1	L
5	Phthalates1	EPA 525.2	GC/MS	µg/L	1	L	2	L	1	L
6	PCB Congeners2	EPA 1668A	HRGC/HRMS	pg/L	1	L	2	L	1	L
7	Herbicides	EPA 8151A	GC/ECD	µg/L	1	L	2	L	1	L
Subtotal					4.85	L	9.7	L	4.85	L

For sediments for priority 1A, 1B, and 1C, the available sample mass will be split to conduct analyses for all 3 analytes if PCB congeners are analyzed.
Metals in sediment: Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, nickel selenium, silver, zinc, mercury (Round 2)
Metals in water: Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, zinc, mercury (Round 2A)
Organochlorine Pesticides in Water: Will only analyze for pesticides in stormwater samples on a site-specific basis, because the Round 2 data suggests data will be mostly non-detects for 1 or 2 Liter samples.

[1] The ACGs for selected organochlorine pesticides, PAHs, and phthalates cannot be met for all analytes by the available analytical methods However, these methods/MRLs provide consistency because they are being us for analysis of the Round 2 and 3 surface water data.

[2] The ACG (from LWG QAAP) is for total PCBs; there are no ACGs for individual congeners. One liter will be a sufficient sample size given where most detection limits are compared to the Total PCB congener results for the Round 2A surface water samples (in the 100 pg/L range). If stormwater sample concentrations are lower

limits are compared to the Total PCB congener results for the Round 2A surface water samples (in the 100 pg/L range). If stormwater sample concentrations are lower than that, they are effectively diluting the river water.

Table 2-4a. Laboratory Methods for Sediment Samples.

Analysis	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
Conventional Analyses	CAS Kelso				
Total solids		--	--	PSEP 1986	Balance
Grain size		--	--	PSEP 1986	Sieve and pipette method
Total organic carbon		Plumb 1981	Acid pretreatment	Plumb et al. 1981	Combustion; coulometric titration
Metals	CAS Kelso				
Antimony, arsenic[a], cadmium, lead, silver		EPA 3050	Strong acid digestion	EPA 6020	ICP/MS
Aluminum, chromium, copper, nickel, zinc		EPA 3050	Strong acid digestion	EPA 6010B	ICP/AES
Selenium		EPA 3050	Strong acid digestion	EPA 7742	AAS
		EPA 7742	Hydride generation		
Arsenic[a]		EPA 3050	Strong acid digestion	EPA 7062	AAS
Mercury		EPA 7471A	Acid digestion/oxidation	EPA 7471A	CVAA
Chlorinated herbicides	CAS Kelso	EPA 8151A	Solvent extraction	EPA 8151A	GC/ECD
			Esterification		
Organochlorine pesticides and selected SVOCs	CAS Kelso	EPA 3541	Soxhlet extraction	EPA 8081A	GC/ECD
		EPA 3620B	Florisil® cleanup		
		EPA 3660B	Sulfur cleanup		
PCB Aroclors	CAS Kelso	EPA 3541	Soxhlet extraction	EPA 8082	GC/ECD
		EPA 3665A	Sulfuric acid cleanup		
		EPA 3620B	Florisil® cleanup		
		EPA 3660B	Sulfur cleanup		
Semivolatile organic compounds	CAS Kelso				
PAHs and phthalates		EPA 3541	Automated Soxhlet Extraction	EPA 8270C	GC/MS-LVI
		EPA 3640A	Gel permeation chromatography		
PCB Congeners[b]	Alta	EPA 1668A	Soxhlet/Dean Stark extraction	EPA 1668A	HRGC/HRMS

Table 2-4a. Laboratory Methods for Sediment Samples.

Analysis	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
			Sulfuric acid cleanup		
			Silica column cleanup		

Notes:
[a] Arsenic will be analyzed by EPA Method 7062 if it is not detected at the MRL by EPA Method 6020.
[b] Analysis will be completed for all 209 PCB congeners.
AAS - Atomic absorption spectrometry
CAS - Columbia Analytical Services
CVAA - cold vapor atomic absorption spectrometry
EPA - U.S. Environmental Protection Agency
GC/ECD - gas chromatography/electron capture detection
GC/FID - gas chromatography/flame ionization detection
GC/MS - gas chromatography/mass spectrometry
HRGC/HRMS - high-resolution gas chromatography/high-resolution mass spectrometry
ICP/AES - inductively coupled plasma/atomic emission spectrometry
ICP/MS - inductively coupled plasma - mass spectrometry
LVI - large-volume injector
TPH - total petroleum hydrocarbon
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
PSEP - Puget Sound Estuary Program
SIM - selected ion monitoring
STL - Severn Trent Laboratories
SVOC - semivolatile organic compound

Table 2-4b. Laboratory Methods for Water Samples.

Analytes	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	**Procedure**	**Protocol**	**Procedure**
Conventional Analyses	CAS				
Total Suspended Solids		EPA 160.2	Filtration and drying	EPA 160.2	Balance
Total Organic Carbon		EPA 415.1	Chemical oxidation	EPA 415.1	Infrared detector
Metals	CAS				
Aluminum, antimony, cadmium, total chromium, copper, lead, nickel, selenium, silver, zinc		EPA 3005	Acid digestion	EPA 200.8	ICP/MS
Arsenic		EPA 3005A (Modified)	Acid Digestion/pre-concentration	EPA 200.8	ICP/MS
Mercury		EPA 7470	Acid digestion/oxidation	EPA 7470	CVAA
Phthalate Esters	CAS	EPA 525.2	Solid-phase extraction	EPA 525.2	GC/MS
Chlorinated Herbicides	CAS	EPA 8151A	Solvent extraction	EPA 8151A	GC/ECD
			Esterification		
Polycyclic Aromatic Hydrocarbon	CAS	EPA 3520C	Continuous liquid-liquid extraction	EPA 8270C	GC/MS-SIM
PCB congeners[2]	Axys	EPA 1668A	Florisil® cleanup	EPA 1668A	HRGC/HRMS
			Extract fractionation		
			Layered Acid/Base SiO_3 Alumina		

CAS - Columbia Analytical Services
EPA - U.S. Environmental Protection Agency
GC/ECD - gas chromatography/electron capture detection
GC/MS - gas chromatography/mass spectrometry
HRGC/HRMS - high resolution gas chromatography/high resolution mass spectrometry
ICP/MS - inductively coupled plasma - mass spectrometry
LVI - large-volume injector
SIM - selected ion monitoring
SOP - standard operating procedures

Table 2-5a. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Sediment Samples.

Analytes	**Congener number (PCBs only)**	**ACG[a]**	**MDL**	**MRL[b]**
Conventional Analyses				
Total solids (percent of whole weight)		*	0.01	0.01
Grain size (percent)[c]		*	0.1	0.1
Total organic carbon (percent)		*	0.02	0.05
Metals, mg/kg dry wt				
Aluminum		*	10.0	10.0
Antimony		*	0.02	0.05
Arsenic		*	0.07	0.5
Cadmium		*	0.007	0.05
Chromium		*	0.6	2.0
Copper		*	2.0	2.0
Lead		*	0.02	0.05
Mercury		*	0.008	0.02
Nickel		*	3.0	4.0
Selenium		*	0.2	1
Silver		*	0.003	0.02
Zinc		*	0.5	2.0
Chlorinated Herbicides, µg/kg dry wt				
2,4,5-T		**2.8**	5.9	50
2,4,5-TP (Silvex)		**2.2**	3.9	50
2,4-D		**2.8**	8	50
2,4-DB		**2.2**	9.7	50
Dalapon		*	7	50
Dicamba		*	5.4	50
Dichlorprop		*	9.5	50
Dinoseb		*	3.5	50
MCPA		*	520	10000
MCPP		*	530	10000
Organochlorine Pesticides and Selected SVOCs, µg/kg dry wt				
2,4'-DDD		*	0.02	0.13
2,4'-DDE		*	0.009	0.13
2,4'-DDT		*	0.01	0.13
4,4'-DDD		**0.083**	0.012	0.13
4,4'-DDE		**0.0588**	0.01	0.13
4,4'-DDT		**0.0588**	0.021	0.13
Total DDT		*	--	--
Aldrin		**0.00038**	0.031	0.13
alpha-BHC		**0.001**	0.01	0.13
beta-BHC		**0.0036**	0.028	0.13
delta-BHC		*	0.018	0.13
gamma-BHC (Lindane)		**0.005**	0.012	0.13
alpha-Chlordane		*	0.008	0.13

Table 2-5a. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Sediment Samples.

Analytes	**Congener number (PCBs only)**	**ACG[a]**	**MDL**	**MRL[b]**
gamma-Chlordane		*	0.005	0.13
Oxychlordane		*	0.012	0.13
cis -Nonachlor		*	0.005	0.13
trans -Nonachlor		*	0.004	0.13
Total chlordane[d]		**0.057**	--	--
Dieldrin		**0.0004**	0.01	0.13
Endosulfan I		1.7	0.014	0.13
Endosulfan II		*	0.008	0.13
Endosulfan sulfate		*	0.026	0.13
Endrin		**0.084**	0.03	0.13
Endrin aldehyde		*	0.02	0.13
Endrin ketone		*	0.007	0.13
Heptachlor		**0.0014**	0.012	0.13
Heptachlor epoxide		**0.0007**	0.018	0.13
Methoxychlor		1.4	0.024	0.13
Mirex		**0.056**	0.007	0.13
Toxaphene		**0.0059**	0.9	10
Hexachlorobenzene		0.33	0.02	0.2
Hexachlorobutadiene		0.6	0.12	0.2
Hexachloroethane		2.0	0.12	0.2
Semivolatile Organic Compounds, µg/kg dry wt				
Polycyclic Aromatic Hydrocarbons				
2-Methylnaphthalene		*	1.2	10
Acenaphthene		72	1	10
Acenaphthylene		*	1.4	10
Anthracene		360	1.4	10
Benz(a)anthracene		**0.038**	1.4	10
Benzo(a)pyrene		**0.0038**	1.6	10
Benzo(b)fluoranthene		**0.038**	2.5	10
Benzo(g,h,i)perylene		*	2.3	10
Benzo(k)fluoranthene		**0.38**	2.5	10
Chrysene		**3.8**	1.4	10
Dibenz(a,h)anthracene		**0.0038**	2.2	10
Dibenzofuran		8.2	1.3	10
Fluoranthene		48	2.2	10
Fluorene		48	1.7	10
Indeno(1,2,3-cd)pyrene		**0.038**	1.9	10
Naphthalene		24	1.3	10
Phenanthrene		*	1.3	10
Pyrene		36	1.3	10
Phthalates				

Table 2-5a. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Sediment Samples.

Analytes	**Congener number (PCBs only)**	**ACG[a]**	**MDL**	**MRL[b]**
Bis(2-ethylhexyl) phthalate		**3.4**	1.7	200
Butylbenzyl phthalate		400	1.5	10
Dibutyl phthalate		204	2.6	10
Diethyl phthalate		*	3.5	10
Dimethyl phthalate		20000	1.8	10
Di-n-octyl phthalate		40.9	1.2	10
PCB congeners				
Dioxin-like PCB congeners (WHO list)	**Congener number**			
3,3',4,4'-TetraCB	PCB-77	10	1.1	5
3,4,4',5-TetraCB	PCB-81	10	1.0	5
2,3,3'4,4'-PentaCB	PCB-105	10	0.9	5
2,3,4,4',5-PentaCB	PCB-114	2	0.7	5
2,3',4,4',5-PentaCB	PCB-118	10	2.1	5
(coelution with 2,3,3',4,5-PentaCB)	(coelution with PCB 106)			
2',3,4,4',5-PentaCB	PCB-123	10	0.9	5
3,3',4,4',5-PentaCB	PCB-126	0.01	0.6	5
2,3,3',4,4',5-HexaCB	PCB-156	2	0.8	5
2,3,3',4,4',5'-HexaCB	PCB-157	2	0.6	5
2,3,4,4',5,5'-HexaCB	PCB-167	100	0.5	5
3,3',4,4',5,5'-HexaCB	PCB-169	0.1	0.8	5
2,3,3',4,4',5,5'-HeptaCB	PCB-189	10	0.3	5
Other PCB congeners				
2-MonoCB	PCB-1		0.5	2.5
3-MonoCB	PCB-2		0.6	2.5
4-MonoCB	PCB-3		0.6	2.5
2,2'-DiCB/2,6-DiCB	PCB-4/10		4.3	2.5
2,3-DiCB/2,4'-DiCB	PCB-5/8		4.4	2.5
2,3'-DiCB	PCB-6		2.2	2.5
2,4-DiCB/2,5-DiCB	PCB-7/9		4.6	2.5
3,3'-DiCB	PCB-11		5.0	2.5
3,4-DiCB/3,4'-DiCB	PCB-12/13		6.1	2.5
3,5-DiCB	PCB-14		3.0	2.5
4,4'-DiCB	PCB-15		2.8	2.5
2,2',3-TriCB/2,4',6-TriCB	PCB-16/32		2.5	2.5
2,2',4-TriCB	PCB-17		1.3	2.5
2,2',5-TriCB	PCB-18		1.4	2.5
2,2',6-TriCB	PCB-19		1.0	2.5

Table 2-5a. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Sediment Samples.

Analytes	**Congener number (PCBs only)**	**ACG[a]**	**MDL**	**MRL[b]**
2,3,3'-TriCB/2,3,4-TriCB/2,3,5-TriCB	PCB-20/21/33		1.4	2.5
2,3,4'-TriCB	PCB-22		0.9	2.5
2,3,5-TriCB	PCB-23		0.7	2.5
2,3,6-TriCB/2,3',6-TriCB	PCB-24/27		2.5	2.5
2,3',4-TriCB	PCB-25		0.8	2.5
2,3',5-TriCB	PCB-26		0.8	2.5
2,4,4'-TriCB	PCB-28		1.5	2.5
2,4,5-TriCB	PCB-29		0.6	2.5
2,4,6-TriCB	PCB-30		0.9	2.5
2,4',5-TriCB	PCB-31		1.2	2.5
2',3,5-TriCB	PCB-34		0.9	2.5
3,3',4-TriCB	PCB-35		0.4	2.5
3,3',5-TriCB	PCB-36		0.9	2.5
3,4,4'-TriCB	PCB-37		0.6	2.5
3,4,5-TriCB	PCB-38		0.9	2.5
3,4',5-TriCB	PCB-39		0.6	2.5
2,2',3,3'-TetraCB	PCB-40		1.2	5
2,2',3,4-TetraCB/2,3,4',6-TetraCB/2,3',4',6-TetraCB/2,3',5,5'-TetraCB	PCB-41/64/71/72		3.5	5
2,2',3,4'-TetraCB/2,3,3',6-Tetra	PCB-42/59		2.0	5
2,2',3,5-TetraCB/2,2',4,5'-Tetra	PCB-43/49		2.2	5
2,2',3,5'-TetraCB	PCB-44		5.3	5
2,2',3,6-TetraCB	PCB-45		1.3	5
2,2',3,6'-TetraCB	PCB-46		1.1	5
2,2',3,4'-TetraCB	PCB-47		3.4	5
2,2',4,5-TetraCB/2,4,4',6-Tetra	PCB-48/75		1.8	5
2,2',4,6-TetraCB	PCB-50		1.5	5
2,2',4,6'-TetraCB	PCB-51		1.1	5
2,2',5,5'-TetraCB/2,3',4,6-Tetra	PCB-52/69		3.3	5
2,2',5,6'-TetraCB	PCB-53		1.0	5
2,2',6,6'-TetraCB	PCB-54		1.9	5
2,3,3',4'-TetraCB	PCB-55		1.0	5
2,3,3',4'-TetraCB/2,3,4,4'-Tetra	PCB-56/60		2.5	5
2,3,3',5-TetraCB	PCB-57		1.2	5
2,3,3',5'-TetraCB	PCB-58		1.2	5
2,3,4,5-TetraCB	PCB-61		1.2	5
2,3,4,6-TetraCB	PCB-62		0.9	5

Table 2-5a. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Sediment Samples.

Analytes	**Congener number (PCBs only)**	**ACG[a]**	**MDL**	**MRL[b]**
2,3,4',5-TetraCB	PCB-63		1.1	5
2,3,5,6-TetraCB	PCB-65		1.3	5
2,3',4,4'-TetraCB	PCB-66		1.8	5
2,3',4,5-TetraCB	PCB-67		1.2	5
2,3',4,5'-TetraCB	PCB-68		1.3	5
2,3',4',5-TetraCB	PCB-70		1.4	5
2,3',5',6-TetraCB	PCB-73		0.7	5
2,4,4',5-TetraCB	PCB-74		1.1	5
2',3,4',5-TetraCB	PCB-76		2.3	5
3,3',4,5-TetraCB	PCB-78		2.8	5
3,3',4,5'-TetraCB	PCB-79		1.7	5
3,3',5,5'-TetraCB	PCB-80		0.9	5
2,2',3,3',4-PentaCB	PCB-82		1.3	5
2,2',3,3',5-PentaCB	PCB-83		0.9	5
2,2',3,3',6-PentaCB/2,2',3,5,5'-P	PCB-84/92		1.6	5
2,2',3,4,4'-PentaCB/2,3,4,5,6-Pe	PCB-85/116		1.3	5
2,2',3,4,5-PentaCB	PCB-86		1.8	5
2,2',3,4,5'-PentaCB/2,3,4',5,6-PentaCB/2',3,4,5,6'-PentaCB	PCB-87/117/125		1.8	5
2,2',3,4,6-PentaCB/2,2',3,4',6-P	PCB-88/91		1.6	5
2,2',3,4,6'-PentaCB	PCB-89		0.7	5
2,2',3,4',5-PentaCB/2,2',4,5,5'-P	PCB-90/101		1.5	5
2,2',3,5,6-PentaCB	PCB-93		1.5	5
2,2',3,5,6'-PentaCB	PCB-94		0.4	5
2,2',3,5',6-PentaCB/2,2',3',4,6-PentaCB/2,2',4,5,6'-PentaCB	PCB-95/98/102		6.4	5
2,2',3,6,6'-PentaCB	PCB-96		0.5	5
2,2',3',4,5-PentaCB	PCB-97		1.3	5
2,2',4,4',5-PentaCB	PCB-99		1.0	5
2,2',4,4',6-PentaCB	PCB-100		0.3	5
2,2',4,5,6'-PentaCB	PCB-103		0.4	5
2,2',4,6,6'-PentaCB	PCB-104		0.5	5
2,3,3',4',5-PentaCB/2,3,3',4,6-PentaCB	PCB-107/109		1.3	5
2,3,3',4,5'-PentaCB/2,3,3',5,6-PentaCB	PCB-108/112		1.0	5

Table 2-5a. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Sediment Samples.

Analytes	**Congener number (PCBs only)**	**ACG[a]**	**MDL**	**MRL[b]**
2,3,3',4',6-PentaCB	PCB-110		1.8	5
2,3,3',5,5'-PentaCB/2,3,4,4',6-PentaCB	PCB-111/115		1.7	5
2,3,3',5',6-PentaCB	PCB-113		1.0	5
2,3',4,4',6-PentaCB	PCB-119		0.9	5
2,3',4,5,5'-PentaCB	PCB-120		1.0	5
2,3',4,5,6-PentaCB	PCB-121		0.9	5
2',3,3',4,5-PentaCB	PCB-122		1.0	5
2',3,4,5,5'-PentaCB	PCB-124		1.1	5
3,3',4,5,5'-PentaCB	PCB-127		0.8	5
2,2',3,3',4,4'-HexaCB/2,3,3',4',5,5'-HexaCB	PCB-128/162		1.2	5
2,2',3,3',4,5-HexaCB	PCB-129		0.8	5
2,2',3,3',4,5'-HexaCB	PCB-130		0.8	5
2,2',3,3',4,6-HexaCB	PCB-131		2.5	5
2,2',3,3',4,6'-HexaCB/2,3,3',4,5',6-HexaCB	PCB-132/161		1.0	5
2,2',3,3',5,5'-HexaCB/2,2',3,4,5,6-HexaCB	PCB-133/142		3.9	5
2,2',3,3',5,6-HexaCB/2,2',3,4,5,6'-HexaCB	PCB-134/143		4.1	5
2,2',3,3',5,6'-HexaCB	PCB-135		1.4	5
2,2',3,3',6,6'-HexaCB	PCB-136		1.2	5
2,2',3,4,4',5-HexaCB	PCB-137		1.0	5
2,2',3,4,4',5'-HexaCB/2,3,3',4',5,6-HexaCB/2,3,3',4',5',6-HexaCB	PCB-138/163/164		2.1	5
2,2',3,4,4',6-HexaCB/2,2',3,4',5',6-HexaCB	PCB-139/149		1.8	5
2,2',3,4,4',6'-HexaCB	PCB-140		1.0	5
2,2',3,4,5,5'-HexaCB	PCB-141		0.6	5
2,2',3,4,5',6-HexaCB	PCB-144		1.7	5
2,2',3,4,6,6'-HexaCB	PCB-145		1.1	5

Table 2-5a. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Sediment Samples.

Analytes	**Congener number (PCBs only)**	**ACG[a]**	**MDL**	**MRL[b]**
2,2',3,4',5,5'-HexaCB/2,3,3',5,5',6-HexaCB	PCB-146/165		1.7	5
2,2',3,4',5,6-HexaCB	PCB-147		0.7	5
2,2',3,4',5,6'-HexaCB	PCB-148		1.1	5
2,2',3,4',6,6'-HexaCB	PCB-150		1.3	5
2,2',3,5,5',6-HexaCB	PCB-151		1.5	5
2,2',3,5,6,6'-HexaCB	PCB-152		1.3	5
2,2',4,4',5,5'-HexaCB	PCB-153		1.2	5
2,2',4,4',5',6-HexaCB	PCB-154		1.1	5
2,2',4,4',6,6'-HexaCB	PCB-155		0.9	5
2,3,3',4,4',6-HexaCB/2,3,3',4,5,6-HexaCB	PCB-158/160		1.3	5
2,3,3',4,5,5'-HexaCB	PCB-159		0.5	5
2,3,4,4',5,6-HexaCB	PCB-166		0.6	5
2,3',4,4',5',6-HexaCB	PCB-168		0.4	5
2,2',3,3',4,4',5-HeptaCB	PCB-170		0.4	5
2,2',3,3',4,4',6-HeptaCB	PCB-171		0.6	5
2,2',3,3',4,5,5'-HeptaCB	PCB-172		0.5	5
2,2',3,3',4,5,6-HeptaCB	PCB-173		0.7	5
2,2',3,3',4,5,6'-HeptaCB	PCB-174		1.4	5
2,2',3,3',4,5',6-HeptaCB	PCB-175		1.2	5
2,2',3,3',4,6,6'-HeptaCB	PCB-176		0.4	5
2,2',3,3',4',5,6-HeptaCB	PCB-177		0.7	5
2,2',3,3',5,5',6-HeptaCB	PCB-178		0.6	5
2,2',3,3',5,6,6'-HeptaCB	PCB-179		0.3	5
2,2',3,4,4',5,5'-HeptaCB	PCB-180		0.7	5
2,2',3,4,4',5,6-HeptaCB	PCB-181		0.8	5
2,2',3,4,4',5,6'-HeptaCB/2,2',3,4,5,5',6-HeptaCB	PCB-182/187		1.1	5
2,2',3,4,4',5',6-HeptaCB	PCB-183		0.6	5
2,2',3,4,4',6,6'-HeptaCB	PCB-184		0.5	5
2,2',3,4,5,5',6-HeptaCB	PCB-185		0.6	5
2,2',3,4,5,6,6'-HeptaCB	PCB-186		0.8	5
2,2',3,4',5,6,6'-HeptaCB	PCB-188		0.5	5
2,3,3',4,4',5,6-HeptaCB	PCB-190		0.7	5
2,3,3',4,4',5',6-HeptaCB	PCB-191		0.5	5

Table 2-5a. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Sediment Samples.

Analytes	**Congener number (PCBs only)**	**ACG[a]**	**MDL**	**MRL[b]**
2,3,3',4,5,5',6-HeptaCB	PCB-192		0.8	5
2,3,3',4',5,5',6-HeptaCB	PCB-193		0.5	5
2,2',3,3',4,4',5,5'-OctaCB	PCB-194		0.9	7.5
2,2',3,3',4,4',5,6-OctaCB	PCB-195		2.1	7.5
2,2',3,3',4,4',5,6'-OctaCB/2,2',3,4,4',5,5',6-OctaCB	PCB-196/203		2.3	7.5
2,2',3,3',4,4',6,6'-OctaCB	PCB-197		0.9	7.5
2,2',3,3',4,5,5',6-OctaCB	PCB-198		1.4	7.5
2,2',3,3',4,5,5',6'-OctaCB	PCB-199		1.5	7.5
2,2',3,3',4,5,6,6'-OctaCB	PCB-200		1.2	7.5
2,2',3,3',4,5',6,6'-OctaCB	PCB-201		1.1	7.5
2,2',3,3',5,5',6,6'-OctaCB	PCB-202		0.6	7.5
2,2',3,4,4',5,6,6'-OctaCB	PCB-204		0.7	7.5
2,3,3',4,4',5,5',6-OctaCB	PCB-205		1.2	7.5
2,2',3,3',4,4',5,5',6-NonaCB	PCB-206		0.5	7.5
2,2',3,3',4,4',5,6,6'-NonaCB	PCB-207		0.5	7.5
2,2',3,3',4,5,5',6,6'-NonaCB	PCB-208		0.7	7.5
DecaCB	PCB-209		0.9	7.5

Notes: Sed table

* A risk-based ACG has not been established.

[a] Values are provided in bold font when the MRL is not expected to meet the ACG.

[b] The MRL is provided on a dry-weight basis and assumes 50% moisture in the samples.
The MRL for project samples will vary with moisture content in the samples.
The MRL represents the level of lowest calibration standard (i.e., the practical quantitation limit).

[c] Grain-size intervals will include the following:

Gravel	Fine sand	Fine silt
Very coarse sand	Very fine sand	Very fine silt
Coarse sand	Coarse silt	Clay, phi size >8
Medium sand	Medium silt	

[d] Total chlordane will be calculated as the sum of the five components listed above this entry.

ACG = Analytical concentration goal; ACGs were established by EPA during *ad hoc* meeting with LWG on May 10, 2002

MDL = Method detection limit

MRL = Method reporting limit

PCB - polychlorinated biphenyl

Notes: Congener table

[1] ACGs for the dioxin-like congeners are based on the ACG of 0.01 pg/g dry wt for PCB-126 from the Round 1 QAPP and adjusted using the WHO TEFs.

Table 2-5a. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Sediment Samples.

Analytes	**Congener number (PCBs only)**	**ACG[a]**	**MDL**	**MRL[b]**

[2] The MRLs and MDLs are provided on a dry-weight basis and assume 50% moisture in the samples and a sample weight of 10 or 50 g, as noted.

The MRL represents the level of lowest calibration standard (i.e., the practical quantitation limit).

Sample-specific MDLs are reported with the final data and will vary based on sample size and characteristics.

ACG = Analytical concentration goal

MDL = Method detection limit
MRL = Method reporting limit
tbd = to be determined
TEF = Toxicity equivalent factor

WHO = World Health Organization

Table 2-5b. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Water Samples.

		Ecological Screening		Human Health Screening Values			Analytical Concentration Goals			Laboratory MDLs and MRLs	
Analytes	**Congener number (PCBs only)**	**AWQC[2]**	**ORNL[3]**	**EPA Region 9 Tap water PRG[4]**	**Fish Consumption Only[5]**	**Site-Specific Fish Consumption Only[6]**	**Level 1 ACG[7]**	**Level 2 ACG[8]**	**Level 3 ACG[9]**	**MDL**	**MRL**
Conventional Analyses, mg/L (ppm)											
Total suspended solids							1 [10]	1 [10]	1 [10]	1	1
Total organic carbon							NE	NE	NE	0.07	0.5
Metals/Inorganics, mg/L (ppm)											
Aluminum		0.087	0.46	36			0.087	0.087	0.087	0.0007	0.002
Antimony			0.61	0.015	0.64	0.064	0.015	0.015	0.015	0.00002	0.00005
Arsenic		0.15	0.914	0.000045	0.00014	0.000014	0.000045	0.000045	0.000014	TBD[12]	0.00005
Cadmium[13]		0.000094	0.00015	0.018			0.000094	0.000094	0.000094	0.00001	0.00002
Chromium, total							NE	NA[14]	NA[14]	0.00006	0.0002
Copper[13]		0.00274	0.00023	1.5			0.00023	0.00023	0.00023	0.00004	0.0001
Lead[13]		0.000541	0.012				0.000541	0.000541	0.000541	0.00001	0.00002
Mercury		0.00077	<0.00023	0.011			<0.00023	<0.00023	<0.00023	0.0001	0.0002
Nickel[13]		0.016	<0.005	0.73	4.6	0.46	<0.005	<0.005	<0.005	0.00004	0.0002
Selenium		0.005	0.0883	0.18	4.2	0.42	0.005	0.005	0.005	0.0002	0.001
Silver			0.00012	0.18			0.00012	0.00012	0.00012	0.00001	0.00002
Zinc[13]		0.0365	0.03	11	26	2.6	0.03	0.03	0.03	0.0002	0.0005
Chlorinated Herbicides, µg/L (ppb)											
Dalapon				1100			1100	1100	1100	0.06	0.4
Dicamba				1100			1100	1100	1100	0.071	0.4
MCPA							NE	NE	NE	24	100
Dichlorprop							NE	NE	NE	0.061	0.4
2,4-D				360			360	360	360	0.079	0.4
2,4,5-TP (Silvex)				290			290	290	290	0.085	0.2
2,4,5-T				360			360	360	360	0.017	0.2
2,4-DB				290			290	290	290	0.13	0.4
Dinoseb				36			36	36	36	0.091	0.2
MCPP				360			360	360	360	23	100
Semivolatile Organic Compounds, µg/L (ppb)											
Polycyclic Aromatic Hydrocarbons											
Naphthalene			620	6.2			6.2	6.2	6.2	0.014	0.02
2-Methylnaphthalene							NE	NE	NE	0.012	0.02
Acenaphthylene							NE	NE	NE	0.0089	0.02
Acenaphthene		23	74	370	990	99	23	23	23	0.0097	0.02
Fluorene		3.9		240	5300	530	3.9	3.9	3.9	0.011	0.02
Phenanthrene		6.3	200				6.3	6.3	6.3	0.013	0.02

Table 2-5b. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Water Samples.

		Ecological Screening		Human Health Screening Values			Analytical Concentration Goals			Laboratory MDLs and MRLs	
Analytes	**Congener number (PCBs only)**	**AWQC[2]**	**ORNL[3]**	**EPA Region 9 Tap water PRG[4]**	**Fish Consumption Only[5]**	**Site-Specific Fish Consumption Only[6]**	**Level 1 ACG[7]**	**Level 2 ACG[8]**	**Level 3 ACG[9]**	**MDL**	**MRL**
Anthracene		0.73	0.09	1800	40000	4000	0.09	0.09	0.09	0.01	0.02
Fluoranthene		6.2	15	1500	140	14	6.2	6.2	6.2	0.013	0.02
Pyrene				180	4000	400	180	180	180	0.012	0.02
Benz(a)anthracene		0.027	0.65	0.092	0.018	0.0018	0.027	0.018	0.0018	0.013	0.02
Chrysene				9.2	0.018	0.0018	9.2	0.018	0.0018	0.012	0.02
Benzo(b)fluoranthene				0.092	0.018	0.0018	0.092	0.018	0.0018	0.0098	0.02
Benzo(k)fluoranthene				0.92	0.018	0.0018	0.92	0.018	0.0018	0.011	0.02
Benzo(a)pyrene		0.14	0.3	0.0092	0.018	0.0018	0.0092	0.0092	0.0018	0.0087	0.02
Indeno(1,2,3-cd)pyrene				0.092	0.018	0.0018	0.092	0.018	0.0018	0.0087	0.02
Dibenz(a,h)anthracene				0.0092	0.018	0.0018	0.0092	0.0092	0.0018	0.0079	0.02
Benzo(g,h,i)perylene							NE	NE	NE	0.009	0.02
Phthalate Esters, µg/L (ppb)											
Dimethylphthalate		3		360000	1100000	110000	3	3	3	0.015	0.5
Diethylphthlalate		3	85,600	29000	44000	4400	3	3	3	0.007	0.5
Di-n-butylphthalate		1.0		3600	4500	450	1	1	1	0.013	0.6
Butylbenzylphthalate		3		7300	1900	190	3	3	3	0.013	0.5
Di-n-octylphthalate		3		1500			3	3	3	0.005	0.1
Bis-(2-ethylhexyl) phthalate		0.12	912	4.8	2.2	0.22	0.12	0.12	0.12	0.049	0.5
PCB congeners, pg/L (ppq)											
2-MonoCB	PCB-1									2.4	5.0 - 10
3-MonoCB	PCB-2									1.1	5.0 - 10
4-MonoCB	PCB-3									2.0	5.0 - 10
2,2'-DiCB	PCB-4									1.7	5.0 - 10
2,3-DiCB	PCB-5									1.4	5.0 - 10
2,3'-DiCB	PCB-6									2.0	5.0 - 10
2,4-DiCB	PCB-7									4.0	5.0 - 10
2,4'-DiCB	PCB-8									2.7	5.0 - 10
2,5-DiCB	PCB-9									2.4	5.0 - 10
2,6-DiCB	PCB-10									4.0	5.0 - 10
3,3'-DiCB	PCB-11									9.5	5.0 - 10
3,4-DiCB/3,4'-DiCB	PCB-12/13									5.1	5.0 - 10
3,5-DiCB	PCB-14									3.1	5.0 - 10
4,4'-DiCB	PCB-15									2.2	5.0 - 10
2,2',3-TriCB	PCB-16									1.4	5.0 - 10

Table 2-5b. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Water Samples.

		Ecological Screening		Human Health Screening Values			Analytical Concentration Goals			Laboratory MDLs and MRLs	
Analytes	**Congener number (PCBs only)**	**AWQC[2]**	**ORNL[3]**	**EPA Region 9 Tap water PRG[4]**	**Fish Consumption Only[5]**	**Site-Specific Fish Consumption Only[6]**	**Level 1 ACG[7]**	**Level 2 ACG[8]**	**Level 3 ACG[9]**	**MDL**	**MRL**
2,2',4-TriCB	PCB-17									2.0	5.0 - 10
2,2',5-TriCB/2,4,6-TriCB	PCB-18/30									3.4	5.0 - 10
2,2',6-TriCB	PCB-19									2.8	5.0 - 10
2,3,3'-TriCB/2,4,4'-TriCB	PCB-20/28									3.9	5.0 - 10
2,3,4-TriCB/2,3,5-TriCB	PCB-21/33									3.9	5.0 - 10
2,3,4'-TriCB	PCB-22									2.7	5.0 - 10
2,3,5-TriCB	PCB-23									3.9	5.0 - 10
2,3,6-TriCB	PCB-24									2.6	5.0 - 10
2,3',4-TriCB	PCB-25									3.3	5.0 - 10
2,3',5-TriCB/2,4,5-TriCB	PCB-26/29									4.7	5.0 - 10
2,3',6-TriCB	PCB-27									2.5	5.0 - 10
2,4',5-TriCB	PCB-31									4.5	5.0 - 10
2,4',6-TriCB	PCB-32									2.2	5.0 - 10
2',3,5-TriCB	PCB-34									2.1	5.0 - 10
3,3',4-TriCB	PCB-35									4.3	5.0 - 10
3,3',5-TriCB	PCB-36									4.0	5.0 - 10
3,4,4'-TriCB	PCB-37									2.8	5.0 - 10
3,4,5-TriCB	PCB-38									2.5	5.0 - 10
3,4',5-TriCB	PCB-39									3.5	5.0 - 10
2,2',3,3'-TetraCB/2,2',3,4-TetraCB/2,3',4',6-TetraCB	PCB-40/41/71									5.3	5.0 - 10
2,2',3,4'-TetraCB	PCB-42									3.7	5.0 - 10
2,2',3,5-TetraCB	PCB-43									5.2	5.0 - 10
2,2',3,5'-TetraCB/2,2',4,4'-TetraCB/2,3,5,6-TetraCB	PCB-44/47/65									5.1	5.0 - 10
2,2',3,6-TetraCB/2,2',4,6'-TetraCB	PCB-45/51									3.5	5.0 - 10
2,2',3,6'-TetraCB	PCB-46									1.5	5.0 - 10
2,2',4,5-TetraCB	PCB-48									2.8	5.0 - 10
2,2',4,5'-TetraCB/2,3',4,6-TetraCB	PCB-49/69									6.4	5.0 - 10

Table 2-5b. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Water Samples.

		Ecological Screening		Human Health Screening Values			Analytical Concentration Goals			Laboratory MDLs and MRLs	
Analytes	**Congener number (PCBs only)**	**AWQC[2]**	**ORNL[3]**	**EPA Region 9 Tap water PRG[4]**	**Fish Consumption Only[5]**	**Site-Specific Fish Consumption Only[6]**	**Level 1 ACG[7]**	**Level 2 ACG[8]**	**Level 3 ACG[9]**	**MDL**	**MRL**
2,2',4,6-TetraCB/2,2',5,6'-TetraCB	PCB-50/53									6.2	5.0 - 10
2,2',5,5'-TetraCB	PCB-52									3.7	5.0 - 10
2,2',6,6'-TetraCB	PCB-54									2.2	5.0 - 10
2,3,3',4'-TetraCB	PCB-55									6.0	5.0 - 10
2,3,3',4'-TetraCB	PCB-56									5.1	5.0 - 10
2,3,3',5-TetraCB	PCB-57									4.0	5.0 - 10
2,3,3',5'-TetraCB	PCB-58									6.9	5.0 - 10
2,3,3',6-TetraCB/2,3,4,6-TetraCB/2,4,4',6-TetraCB	PCB-59/62/75									7.0	5.0 - 10
2,3,4,4'-TetraCB	PCB-60									4.4	5.0 - 10
2,3,4,5-TetraCB/2,3',4',5-TetraCB/2,4,4',5-TetraCB/2',3,4',5-TetraCB	PCB-61/70/74/76									10.1	5.0 - 10
2,3,4',5-TetraCB	PCB-63									2.4	5.0 - 10
2,3,4', 6-TetraCB	PCB-64									3.3	5.0 - 10
2,3',4,4'-TetraCB	PCB-66									6.5	5.0 - 10
2,3',4,5-TetraCB	PCB-67									5.8	5.0 - 10
2,3',4,5'-TetraCB	PCB-68									4.6	5.0 - 10
2,3',5,5'-TetraCB	PCB-72									4.3	5.0 - 10
2,3',5',6-TetraCB	PCB-73									1.9	5.0 - 10
3,3',4,4'-TetraCB	PCB-77									2.8	5.0 - 10
3,3',4,5-TetraCB	PCB-78									3.2	5.0 - 10
3,3',4,5'-TetraCB	PCB-79									4.2	5.0 - 10
3,3',5,5'-TetraCB	PCB-80									3.7	5.0 - 10
3,4,4',5-TetraCB	PCB-81									3.0	5.0 - 10
2,2',3,3',4-PentaCB	PCB-82									2.2	5.0 - 10
2,2',3,3',5-PentaCB/2,2',4,4',5-PentaCB	PCB-83/99									4.0	5.0 - 10
2,2',3,3',6-PentaCB	PCB-84									1.9	5.0 - 10
2,2',3,4,6-PentaCB/2,2',3,4',6-PentaCB	PCB-88/91									3.8	5.0 - 10

Table 2-5b. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Water Samples.

		Ecological Screening		Human Health Screening Values			Analytical Concentration Goals			Laboratory MDLs and MRLs	
Analytes	**Congener number (PCBs only)**	**AWQC[2]**	**ORNL[3]**	**EPA Region 9 Tap water PRG[4]**	**Fish Consumption Only[5]**	**Site-Specific Fish Consumption Only[6]**	**Level 1 ACG[7]**	**Level 2 ACG[8]**	**Level 3 ACG[9]**	**MDL**	**MRL**
2,2',3,4,6'-PentaCB	PCB-89									1.5	5.0 - 10
2,2',3,5,5'-PentaCB	PCB-92									2.3	5.0 - 10
2,2',3,5,6'-PentaCB	PCB-94									4.0	5.0 - 10
2,2',3,5',6-PentaCB/2,2',3,5,6 -PentaCB/2,2',4,4',6 -PentaCB/2,2',4,5,6'-PentaCB	PCB-95/100/93/102									9.7	5.0 - 10
2,2',3,6,6'-PentaCB	PCB-96									2.0	5.0 - 10
2,2',4,5,6'-PentaCB	PCB-103									3.9	5.0 - 10
2,2',4,6,6'-PentaCB	PCB-104									3.2	5.0 - 10
2,3,3'4,4'-PentaCB	PCB-105									0.9	5.0 - 10
2,3,3'4,5-PentaCB	PCB-106									4.1	5.0 - 10
2,3,3',4',5-PentaCB/2',3,4,5,5'-PentaCB	PCB-107/124									1.9	5.0 - 10
2,3,3',4,5'-PentaCB/2,3',4,4',6-PentaCB/2,2',3,4,5-PentaCB/2,2',3',4,5-PentaCB	PCB-108/119/86/97									8.4	5.0 - 10
2,3,3',4,6-PentaCB	PCB-109									2.9	5.0 - 10
2,3,3',4',6-PentaCB/2,3,4,4',6-PentaCB	PCB-110/115									2.7	5.0 - 10
2,3,3',5,5'-PentaCB	PCB-111									2.0	5.0 - 10
2,3,3',5,6-PentaCB	PCB-112									1.7	5.0 - 10
2,3,3',5',6-PentaCB	PCB-113									5.1	5.0 - 10
2,3,4,4',5-PentaCB	PCB-114									1.6	5.0 - 10
2,3,3',5',6-PentaCB/2,3,4,5,6-PentaCB/2,2',3,4,4'-PentaCB	PCB-117/116/85									7.2	5.0 - 10
2,3',4,4',5-PentaCB	PCB-118									2.4	5.0 - 10
2,3',4,5,5'-PentaCB	PCB-120									2.5	5.0 - 10
2,3',4,5,6-PentaCB	PCB-121									2.1	5.0 - 10
2',3,3',4,5-PentaCB	PCB-122									4.7	5.0 - 10
2',3,4,4',5-PentaCB	PCB-123									3.2	5.0 - 10
3,3',4,4',5-PentaCB	PCB-126									1.5	5.0 - 10
3,3',4,5,5'-PentaCB	PCB-127									3.5	5.0 - 10

Table 2-5b. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Water Samples.

		Ecological Screening		Human Health Screening Values			Analytical Concentration Goals			Laboratory MDLs and MRLs	
Analytes	**Congener number (PCBs only)**	**AWQC[2]**	**ORNL[3]**	**EPA Region 9 Tap water PRG[4]**	**Fish Consumption Only[5]**	**Site-Specific Fish Consumption Only[6]**	**Level 1 ACG[7]**	**Level 2 ACG[8]**	**Level 3 ACG[9]**	**MDL**	**MRL**
2,2',3,3',4,4'-HexaCB/2,3,4,4',5,6-HexaCB	PCB-128/166									3.2	5.0 - 10
2,2',3,3',4,5'-HexaCB	PCB-130									1.3	5.0 - 10
2,2',3,3',4,6-HexaCB	PCB-131									1.9	5.0 - 10
2,2',3,3',4,6'-HexaCB	PCB-132									2.5	5.0 - 10
2,2',3,3',5,5'-HexaCB	PCB-133									2.4	5.0 - 10
2,2',3,3',5,6-HexaCB/2,2',3,4,5,6'-HexaCB	PCB-134/143									3.3	5.0 - 10
2,2',3,3',6,6'-HexaCB	PCB-136									2.3	5.0 - 10
2,2',3,4,4',5-HexaCB	PCB-137									2.5	5.0 - 10
2,2',3,4,4',5'-HexaCB/2,3,3',4',5,6-HexaCB/2,2',3,3',4,5 - HexaCB/2,3,3',4,5,6-HexaCB	PCB-138/163/129/160									4.5	5.0 - 10
2,2',3,4,4',6-HexaCB/2,2',3,4,4',6'-HexaCB	PCB-139/140									3.9	5.0 - 10
2,2',3,4,5,5'-HexaCB	PCB-141									1.5	5.0 - 10
2,2',3,4,5,5'-HexaCB	PCB-142									3.9	5.0 - 10
2,2',3,4,5',6-HexaCB	PCB-144									2.0	5.0 - 10
2,2',3,4,6,6'-HexaCB	PCB-145									2.0	5.0 - 10
2,2',3,4',5,5'-HexaCB	PCB-146									1.3	5.0 - 10
2,2',3,4',5,6-HexaCB/2,2',3,4',5',6 - HexaCB	PCB-147/149									2.3	5.0 - 10
2,2',3,4',5,6'-HexaCB	PCB-148									2.7	5.0 - 10
2,2',3,4',6,6'-HexaCB	PCB-150									2.5	5.0 - 10
2,2',3,5,5',6-HexaCB/2,2',3,3',5,6'-HexaCB/2,2',4,4',5',6-HexaCB	CB-151/135/154									6.8	5.0 - 10
2,2',3,5,6,6'-HexaCB	PCB-152									1.5	5.0 - 10
2,2',4,4',5,5'-HexaCB/2,3',4,4',5',6-HexaCB	PCB-153/168									3.8	5.0 - 10

Table 2-5b. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Water Samples.

		Ecological Screening		Human Health Screening Values			Analytical Concentration Goals			Laboratory MDLs and MRLs	
Analytes	**Congener number (PCBs only)**	**AWQC[2]**	**ORNL[3]**	**EPA Region 9 Tap water PRG[4]**	**Fish Consumption Only[5]**	**Site-Specific Fish Consumption Only[6]**	**Level 1 ACG[7]**	**Level 2 ACG[8]**	**Level 3 ACG[9]**	**MDL**	**MRL**
2,2',4,4',6,6'-HexaCB	PCB-155									3.1	5.0 - 10
2,3,3',4,4',5-HexaCB/2,3,3',4,4',5'-HexaCB	PCB-156/157									1.2	5.0 - 10
2,3,3',4,4',6-HexaCB	PCB-158									1.3	5.0 - 10
2,3,3',4,5,5'-HexaCB	PCB-159									2.3	5.0 - 10
2,3,3',4,5',6-HexaCB	PCB-161									1.6	5.0 - 10
2,3,3',4',5,5'-HexaCB	PCB-162									2.8	5.0 - 10
2,3,3',4',5',6-HexaCB	PCB-164									1.7	5.0 - 10
2,3,3',5,5',6-HexaCB	PCB-165									3.1	5.0 - 10
2,3,4,4',5,5'-HexaCB	PCB-167									1.5	5.0 - 10
3,3',4,4',5,5'-HexaCB	PCB-169									1.2	5.0 - 10
2,2',3,3',4,4',5-HeptaCB	PCB-170									2.0	5.0 - 10
2,2',3,3',4,4',6-HeptaCB/2,2',3,3',4,5,6-HeptaCB	PCB-171/173									2.1	5.0 - 10
2,2',3,3',4,5,5'-HeptaCB	PCB-172									2.3	5.0 - 10
2,2',3,3',4,5,6'-HeptaCB	PCB-174									2.9	5.0 - 10
2,2',3,3',4,5',6-HeptaCB	PCB-175									1.7	5.0 - 10
2,2',3,3',4,6,6'-HeptaCB	PCB-176									2.7	5.0 - 10
2,2',3,3',4',5,6-HeptaCB	PCB-177									3.4	5.0 - 10
2,2',3,3',5,5',6-HeptaCB	PCB-178									0.8	5.0 - 10
2,2',3,3',5,6,6'-HeptaCB	PCB-179									2.3	5.0 - 10
2,2',3,4,4',5,5'-HeptaCB/2,3,3',4',5,5',6-HeptaCB	PCB-180/193									6.2	5.0 - 10
2,2',3,4,4',5,6-HeptaCB	PCB-181									3.7	5.0 - 10
2,2',3,4,4',5,6'-HeptaCB	PCB-182									2.4	5.0 - 10
2,2',3,4,4',5',6-HeptaCB/2,2',3,4,5,5',6-HeptaCB	PCB-183/185									2.3	5.0 - 10
2,2',3,4,4',6,6'-HeptaCB	PCB-184									2.7	5.0 - 10
2,2',3,4,5,6,6'-HeptaCB	PCB-186									2.3	5.0 - 10

Table 2-5b. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Water Samples.

		Ecological Screening		Human Health Screening Values			Analytical Concentration Goals			Laboratory MDLs and MRLs	
Analytes	**Congener number (PCBs only)**	**AWQC[2]**	**ORNL[3]**	**EPA Region 9 Tap water PRG[4]**	**Fish Consumption Only[5]**	**Site-Specific Fish Consumption Only[6]**	**Level 1 ACG[7]**	**Level 2 ACG[8]**	**Level 3 ACG[9]**	**MDL**	**MRL**
2,2',3,4,5,5',6-HeptaCB	PCB-187									1.9	5.0 - 10
2,2',3,4',5,6,6'-HeptaCB	PCB-188									2.6	5.0 - 10
2,3,3',4,4',5,5'-HeptaCB	PCB-189									2.0	5.0 - 10
2,3,3',4,4',5,6-HeptaCB	PCB-190									3.7	5.0 - 10
2,3,3',4,4',5',6-HeptaCB	PCB-191									2.8	5.0 - 10
2,3,3',4,5,5',6-HeptaCB	PCB-192									3.7	5.0 - 10
2,2',3,3',4,4',5,5'-OctaCB	PCB-194									0.8	5.0 - 10
2,2',3,3',4,4',5,6-OctaCB	PCB-195									2.8	5.0 - 10
2,2',3,3',4,4',5,6'-OctaCB	PCB-196									3.6	5.0 - 10
2,2',3,3',4,4',6,6'-OctaCB/2,2',3,3',4,5,6,6'-OctaCB	PCB-197/200									2.4	5.0 - 10
2,2',3,3',4,5,5',6-OctaCB/2,2',3,3',4,5,5',6'-OctaCB	PCB-198/199									5.1	5.0 - 10
2,2',3,3',4,5',6,6'-OctaCB	PCB-201									2.6	5.0 - 10
2,2',3,3',5,5',6,6'-OctaCB	PCB-202									2.1	5.0 - 10
2,2',3,4,4',5,5',6-OctaCB	PCB-203									2.5	5.0 - 10
2,2',3,4,4',5,6,6'-OctaCB	PCB-204									1.7	5.0 - 10
2,3,3',4,4',5,5',6-OctaCB	PCB-205									2.9	5.0 - 10
2,2',3,3',4,4',5,5',6-NonaCB	PCB-206									3.5	5.0 - 10
2,2',3,3',4,4',5,6,6'-NonaCB	PCB-207									2.2	5.0 - 10
2,2',3,3',4,5,5',6,6'-NonaCB	PCB-208									1.9	5.0 - 10
DecaCB	PCB-209									2.8	5.0 - 10

Notes:
[2]AWQC based on NRWQC freshwater aquatic life criteria (EPA 2002c).
[3] ORNL based on Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota (Suter and Tsao 1996) .
[4] Based on EPA Region 9 Preliminary Remediation Goals (PRGs) (EPA 2002b).
[5] Based on NRWQC human health criteria (EPA 2002c) and The Revised Human Health Water Quality Criteria (EPA 2003).
[6] Based on Portland Harbor site-specific fish consumption rates in HHRA work plan of up to 175 g/day.
[7] Level 1 ACGs are the lowest of the EPA Region 9 PRGs for Tap Water (EPA 2002b), NRWQC freshwater aquatic life criteria (EPA 2002c), or ORNL values (Suter and Tsao 1996).
[8] Level 2 ACGs are the lowest of the EPA Region 9 PRGs for Tap Water (EPA 2002b), NRWQC freshwater aquatic life criteria and human health criteria (EPA

Table 2-5b. Analytes, Analytical Concentration Goals, Method Detection Limits, and Method Reporting Limits for Water Samples.

		Ecological Screening		Human Health Screening Values			Analytical Concentration Goals			Laboratory MDLs and MRLs	
Analytes	**Congener number (PCBs only)**	**AWQC[2]**	**ORNL[3]**	**EPA Region 9 Tap water PRG[4]**	**Fish Consumption Only[5]**	**Site-Specific Fish Consumption Only[6]**	**Level 1 ACG[7]**	**Level 2 ACG[8]**	**Level 3 ACG[9]**	**MDL**	**MRL**

[9] Level 3 ACGs are the lowest of the EPA Region 9 PRGs for Tap Water (EPA 2002b), NRWQC freshwater aquatic life criteria and human health criteria (EPA

[13] Parameters for calculating freshwater dissolved metals criteria that are hardness-dependent are from NRWQC (EPA 2002c). Hardness dependent criteria based on average hardness of

Table 3-1. Estimates of stormwater sample volumes needed to meet minimum mass requirements.

Priority	Analyte	Units	Minimum Sample Size	Additional Mass for Lab QC	Addl. MassField for field dup/rep	Estimated Particle load (min. - median)
Sediment Samples						
1A	PCB Congeners	pg/g	10 g	20 g	10 g	(50mg/L - 80mg/L)
1B	TOC	percent	1 g	2 g	1 g	(50mg/L - 80mg/L)
1C	Percent Solids	percent	1 g	2 g	1 g	(50mg/L - 80mg/L)
2	Organochlorine pesticides	µg/kg	10 g	20 g	10 g	(50mg/L - 80mg/L)
3	PAHs and Phthalates	µg/kg	20 g	40 g	20 g	(50mg/L - 80mg/L)
4	Metals	mg/kg	15 g	30 g	15 g	(50mg/L - 80mg/L)
5	Herbicides	µg/kg	10 g	20 g	10 g	(50mg/L - 80mg/L)
6	Grain size	percent	100 g	200 g	100 g	(50mg/L - 80mg/L)
		Subtotal	167 g	334 g	167 g	

Estimates of sampling times per analyte group priorities using two sampling methods.

Priority	Analyte Groups	Min. Sample Size	Estimated Min. Sample Volume (50mg/L - 80mg/L)	Sampling Method	Pumping Rates
1A-C	PCB Congeners, TOC Percent Solids	12 g	200L / 130L	Peristaltic	1.7L/min
				PCF Centrifuge	4L/min
1 - 2	Group 1 + pesticides	22 g	440L / 275L	Peristaltic	1.7L/min
				PCF Centrifuge	4L/min
1 - 3	Group 1, 2 + PAHs and Phthalates	42 g	840L / 546L	Peristaltic	1.7L/min
				PCF Centrifuge	4L/min
1 - 4	Group 1, 2, 3 + Metals	57 g	1,140L / 734L	Peristaltic	1.7L/min

				PCF Centrifuge	4L/min
1 - 5	Group 1,2, 3, 4, + herbicides	67 g	1,340L / 864L	Peristaltic	1.7L/min
				PCF Centrifuge	4L/min
1 - 6	All analytes	167 g	3,340L / 2,164L	Peristaltic	1.7L/min
				PCF Centrifuge	4L/min

Note
PCF Centrifuge = Portable continuous flow centrifuge
Peristaltic = standard volume peristaltic pump
Pumping rates are low estimates. Sampling times may decrease as better suited sampling equipment is identified.

If sediment traps cannot be deployed		
Estimated Min. Sample Volume	**Additional Vol. for Lab QC**	**Additional Vol. For field dup/rep**
200L / 130L	400L / 250L	200L / 130L
20L / 13L	40L / 25L	20L / 13L
20L / 13L	40L / 25L	20L / 13L
200L / 130L	400L / 250L	200L / 130L
400L / 260L	800L / 500L	400L / 260L
300L / 188L	600L / 375L	300L / 188L
200L / 130L	400L / 250L	200L / 130L
2,000L / 1,300L	4,000L / 2,600L	2,000L / 1,300L
3,340L / 2,164L	6,680L / 4,328L	3,340L / 2,164L

Estimated Sampling Time
2 h / 1h 20min
50min / 30 min
4h 20min / 2h 40min
1h 50min / 1h 10min
8h 15min / 5h 20min
3h 30min / 2h 15min
11h 10min / 7h 12 min

4h 45min / 3h
13h 10 min / 8h 30min
5h 40min / 3h 40min
32h 45min / 21h 10 min
14h / 9h